916.87
B85

PE COLONY

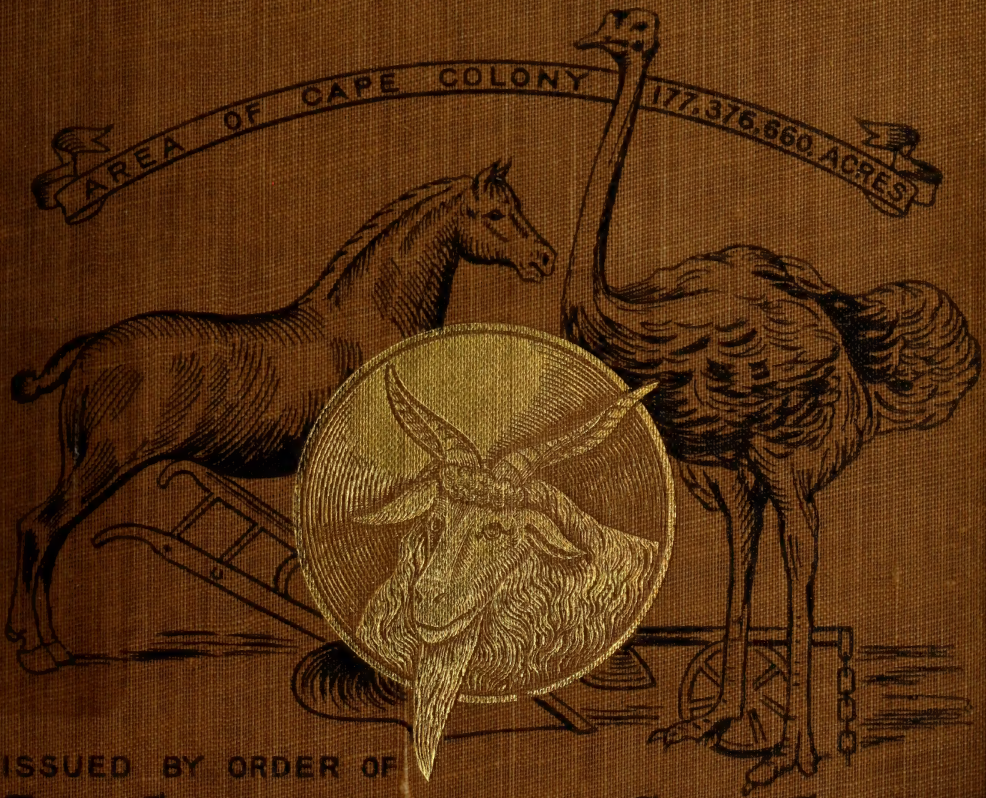
FOR

HE SETTLER

URBAN AND RURAL
DUSTRIES, THEIR
EVELOPMENT AND
EXTENSION.

BY

A.R.E. BURTON, F.R.G.S.



ISSUED BY ORDER OF

THE GOVERNMENT OF CAPE COLONY.

3098 5
D
317

RECENT PUBLICATIONS BY

P. S. KING & SON, Westminster, Eng.

AFRI ers, &c.,
re

CIVII INTER-
N BOURNE.
W 10*s.* 6*d.*
n

EDUC ET, M.A.
C

ELEM ., F.S.S.
S

HIST ols., 42*s.*
n GEORGE
N ol. III.,
1

HIST UTCHINS
a Y SIDNEY
W

PARI PATHOS.
B

PUBL . SYKES,
M

SELF- T WAS
A By F.
E

SEWA FOWLER.
6

TAXA OVERN-
M

THE

THE IXON H.
I

THE COTTAGE HOMES OF ENGLAND. By W. WALTER CROTCH. Second Edition. 2*s.* net.

THE PLACE OF COMPENSATION IN TEMPERANCE REFORM. By C. P. SANGER, M.A. 2*s.* 6*d.*

THE PROBLEM IN CHINA AND BRITISH POLICY. By A. R. COLQUHOUN. 2*s.* net.

Presented to the

UNIVERSITY OF TORONTO
LIBRARY

by the

ONTARIO LEGISLATIVE
LIBRARY

1980

P. S. King & Son,

ESTABLISHED IN PARLIAMENT STREET, 1819.

ORCHARD HOUSE,
2 & 4, GREAT SMITH ST.,
WESTMINSTER.

PUBLISHERS,

PARLIAMENTARY AND GENERAL BOOKSELLERS,

BOOKBINDERS AND PRINTERS.

⚜ ⚜ ⚜

Monthly Catalogue of all recent Parliamentary Papers, Reports, Bills, &c., also of the Reports issued by the India Office and Government of India, the London County Council, and the School Board for London, and of Books and Pamphlets on Questions of the Day—Political, Economical, and Social. Post free.

⚜ ⚜ ⚜

Books (New and Old). **Reports.**
Parliamentary Papers. **Blue Books.**
Pamphlets. **Official Publications, &c.**

⚜ ⚜ ⚜

LONDON COUNTY COUNCIL.

The Reports of the London County Council, consisting of the Annual Accounts, Reports on Water Supply, Public Health and Sanitary Matters, Fire Brigade, Works Department, Technical Education, Rating and Taxation, Statistics, &c., are published by P. S. King & Son. *Catalogue, post free.*

SCHOOL BOARD FOR LONDON.

P. S. King & Son are the appointed Publishers to the School Board for London, to whom all applications for Reports and Publications issued by that body should be made. *Catalogue, post free.*

CAPE COLONY

FOR

THE SETTLER.

26735

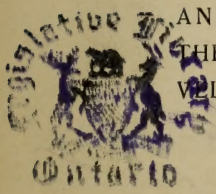
CAPE COLONY

FOR

THE SETTLER.

Africa

AN ACCOUNT OF ITS URBAN AND RURAL INDUSTRIES, THEIR PROBABLE FUTURE DEVELOPMENT AND EXTENSION.



BY

A. R. E. BURTON, F.R.G.S.,

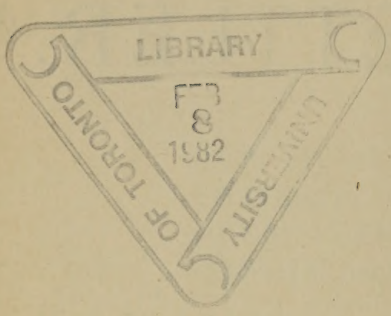
EDITOR OF THE *Transvaal Agricultural Magazine;*
LATE EDITOR OF THE *Cape Government Agricultural Journal.*

ISSUED BY ORDER OF
THE GOVERNMENT OF THE CAPE COLONY.

LONDON:
P. S. KING & SON,
ORCHARD HOUSE, WESTMINSTER.

SOUTH AFRICA:
J. C. JUTA & CO.,
CAPE TOWN, JOHANNESBURG, PORT ELIZABETH, GRAHAMSTOWN,
KING WILLIAM'S TOWN, STELLENBOSCH, EAST LONDON.

1903.



DT
822
B77

PREFACE.

It will be observed that this work has been specially prepared for the guidance of those who may seek a home in Cape Colony. In order that the reader may easily find the information he requires, every Division has been separately delineated, and arranged in alphabetical order, so that even an index is scarcely necessary. Every portion of the work is based upon actual Cape experience, and in gathering much of the information, levies have been made upon newspaper editors, postmasters, farmers, Civil Commissioners, Field Cornets, and Government officials in every Department of the Government Service, to whom grateful acknowledgments are given. The author has, moreover, traversed nearly every part of the Colony in quest of reliable data. Although the work has been got ready somewhat hurriedly, and was begun at a time when martial law hampered the movements of the traveller, it is improbable that anything of importance to the intending settler has been omitted. Most of the hotels in the country raised their tariffs during the war, and have not yet lowered them, and many that were known as first-class establishments have sunk below that level. Notices of hotels have therefore been omitted until the publication of a later edition of this work. It will be noticed that the valuations of land in Appendix C. at

the end of the volume are the farmers' own estimates. It is recommended that the services of a reliable agent should be obtained when the settler wants to make a bargain in land. The agent should know the country well, and have a knowledge of Dutch. Any Cape Town or local bank would be able to recommend such a person. In most of the large country towns, and in many of the smaller places, there are shown to be openings for skilled handicraftsmen. Referring to the post-cart itinerary which accompanies each Division, it may be explained that these post-carts always carry passengers. Appendix C. also shows the nature of the soil in each Division, the staple crops, the proper seasons for sowing and reaping, the nature and quantity of manure used, the season's yield of each crop, the crops which the farmers esteem the most, the number of wettings the irrigator farmer applies to each crop, and the farmer's estimate of the saleable value of land in his district. This return comprises the principal farms in over sixty Divisions, north, east, south and west of the Colony, so that in conjunction with the annual returns of produce shown at the foot of each Division, it is easy to gain a conception of the commercial nature of the whole country. The land values, as stated here and there in the body of the book, are based upon the estimates of local uninterested valuers, and not on those of the farmers.

Thanks are also tendered to the *Midland News*, Professor MacOwan, Dr. Hutcheon, and Mr. F. Franks for their contributions.

CONTENTS.

PAGE

PREFACE v

PART I.

CHAPTER I.

Cape Colony; its Physical Description, Flora and Fauna—Natives of South Africa—Native Labour—Master and Servants Acts—Cape Farmers—The Cape Working Man 1

CHAPTER II.

Crown Lands and Land Laws—Precious Stones and Minerals—Population—Public Debt, Revenue, Expenditure—Banks—Imports and Exports—A Decade of Exports—Customs—Railways—Railway Regulations—Constitution and Government of the Colony—Agricultural Department 23

CHAPTER III.

Fruit Culture at the Cape—Viticulture—Import Regulations .. 38

CHAPTER IV.

The Propagation and Culture of the Vine 51

CHAPTER V.

Wheat and Rust 93

CHAPTER VI.

Lucerne Growing 98

CHAPTER VII.

Irrigation in the Colony—Irrigation Loans—The starting of an Irrigation Farm—Stock Farming with Irrigation—*Brak Land* in relation to Irrigation and Drainage 114

PAGE

CHAPTER VIII.

Dairying 133

CHAPTER IX.

Sheep and Goats 137

CHAPTER X.

Horses of the Cape—Mules—Asses—Cattle—Ostriches—Animal Diseases 144

PART II.

THE DIVISIONS OF THE CAPE.

	PAGE		PAGE		PAGE
Aberdeen	153	George	187	Prince Albert	221
Albany	154	Graaff Reinet	189	Queen's Town	223
Albert	156	Hanover	191	Richmond	225
Alexandria	157	Herbert	192	Riversdale	226
Aliwal North	158	Humansdorp	194	Robertson	229
Barkly East	161	Jansenville	197	Somerset East	232
Bathurst	162	King William's Town	198	Stellenbosch	234
Beaufort West	163	Knysna	201	Steynsburg	235
Bedford	164	Komgha	202	Stockenstrom	236
Bredasdorp	166	Ladismith	204	Stutterheim	237
Britstown	167	Malmesbury	206	Sutherland	238
Caledon	168	Middelburg	207	Swellendam	239
Cape	170	Mossel Bay	207	Tarka	240
Carnarvon	173	Namaqualand	208	Tulbagh	242
Cathcart	174	Oudtshoorn	209	Uitenhage	243
Ceres	176	Paarl	212	Uniondale	244
Colesberg	180	Peddie	216	Victoria East	245
Cradock	181	Philip's Town	218	Victoria West	246
East London	183	Piquetberg	219	Willowmore	247
Fort Beaufort	184	Port Elizabeth	220	Wodehouse	248
Fraserburg	185			Worcester	249

NATIVE TERRITORIES.

Transkei, Tembuland, Griqualand East, Pondoland 251

PAGE

Bechuanaland.

Gordonia, Kuruman, Mafeking, Taungs, Vryburg 254

Griqualand West.

Barkly West, Hay, Herbert, Kimberley 253

APPENDIX.

A.—Statement showing Area of Crown Lands in Each Division disposed of in 1901 257
B.—Return showing Extent of Surveyed and Unsurveyed Crown Lands in Each Division 258
C.—Land in the Various Divisions of the Colony 259
D.—Wages and Rent 324
E.—Prices of Provisions 327
F.—Prices of Clothing 328
G.—Prices of Stock and Animal Productions 329
H.—Prices of Agricultural Produce 330
I.—Rainfall 332
J.—Total Rainfall for 1901 334
K.—Publications of the Agricultural Department 340

LIST OF MAPS.

PAGE

Mean Annual Rainfall .. .. *facing* 40
Rainfall (December, January, February, March) .. ,, 40
Rainfall (May, June, July, August) .. .. .. ,, 40
Sheep (Density per Square Mile) .. .. ,, 256
Goats ,, ,, ,, ... ,, 256
Horses, Mules, and Asses (Density per Square Mile) ,, 256
Horned Cattle ,, ,, ,, ,, 256
Ostriches ,, ,, ,, ,, 256

LIST OF PLATES.

		PAGE
Cape Town, Table Mountain	*facing*	1
Arum Lilies	,,	3
Raisin Making, Worcester	,,	38
Farmhouse, Groot Constantia Wine Farm	,,	46
Grape Gathering, Constantia, with a Flank of Table Mountain in the Background	,,	51
Lucerne	,,	98
An Africander Cow being milked by a Kaffir Boy	,,	133
Flock of Fat Cross-bred Merino and Fat-tailed Sheep	,,	137
Angora Goat, Young Ewe	,,	141
Angora Goats, Young Rams	,,	141
Imported Suffolk Punch Stallion	,,	144
Imported Cleveland Bay Stallion	,,	145
Dexter-Shorthorn Bull	,,	147
Dexter-Shorthorn Heifer	,,	147
Dexter-Kerry Bull	,,	148
Dexter-Kerry Cow	,,	148
Ostriches	,,	149
A Farm on the Southern Borders of the Great Karroo	,,	153
Colonial Government Bacteriological Institute, Grahamstown (Exterior View)	,,	155
Ross's Farm, Bedford	,,	165
Alluvial Plain, Karroo	,,	181
Wellwood Farm in the Mountains North-east of Graaff Reinet	,,	189
A Road through the Forest	,,	201
The Morning Market, Port Elizabeth	,,	220
Entrance to Zwarteberg Pass from the North	,,	222
An Old Dutch Dwelling	,,	239
Mountain Scenery, Worcester—Hex River Valley	,,	249
Ditto, Vineyards	,,	250
Bullock Waggons Fording a River	,,	251

Cape Town, Table Mountain.

CAPE COLONY FOR THE SETTLER.

PART I.

CHAPTER I.

CAPE COLONY: PHYSICAL DESCRIPTION.

The Cape Colony comprises the southernmost portion of the South African sub-continent. Until 1879 its northern boundary was the Orange River, but the subsequent annexation of the Province of Griqualand West and the Colony of British Bechuanaland has extended its boundary northwards, between the 20th degree east longitude, and the western boundaries of the Transvaal and the Orange River Colony to the River Molopo.

It is now bounded on the North-West by German South-West Africa, on the North by the Bechuanaland Protectorate, on the North-East by the Transvaal, Orange River Colony, Basutoland, and Natal. On the West it is bounded by the Atlantic, and on the South and South-East by the Indian Ocean.

It lies between latitudes 25° 30′ and 35° south, and longitudes 18° and 30° east.

Like most other countries Cape Colony has its mountains, rivers and plains, but their arrangement is the characteristic of the continent. The plains exist as high tablelands extending over the interior, traversed by the Orange River with its chief tributaries, on the North the Hartz, Reit, Modder and Molopo, on the South the Hartebeeste and Ongars.

The mountains are arranged in concentric ranges round the coast, forming the retaining walls of a succession of gigantic

terraces leading from the high inland plateaux to the sea level. These ranges are three in number and known as follows, going seawards from the interior :—

1. The Roggeveld-Nieuwveld-Stormberg-Drakenstein range.
2. The Bokkeveld-Witteberg-Zwarteberg-Zuurberg range.
3. The Olifants River - Drakenstein - Langeberg - Outeniqua range.

Through gaps in these retaining walls flow westwards the Olifants and Berg Rivers, into the Atlantic ; and southwards into the Indian Ocean the Breede, Gouritz, Gamtoos, Sundays, Great Fish and Kei Rivers.

The tablelands of the interior average some 4,000 feet in altitude, and are clothed for the most part with a mixture of long grass and grey bush, the grass predominating in the less arid portions and the bush in the drier parts.

The Eastern and North-Eastern portions of the Colony get their rains chiefly in the summer when the South-East trade wind blows. This wind compares to the South-West monsoon of India, and like it brings rain to the interior districts. The Western and South-Western parts of the Colony get their rains in winter with the North-West wind.

In the westerly portions of the Western Province the prevailing wind in summer is the South-south-east, locally known as the "South-easter," and further North it is actually Southerly ; but owing to its originating close to the coast the inblowing wind traverses but a small stretch of ocean before it reaches the land, and it is, therefore, a dry wind.

On the other hand, the South-East winds, which bring rain to the Eastern Province, traverse a considerable breadth of the Indian Ocean before striking the continent and contain the most moisture of all prevailing winds. These regions have therefore a generous rainfall in summer. In the winter the predominant wind in the Eastern districts is the North-West. It comes from a portion of the equatorial belt where there is land, which perhaps accounts for its aridity and high temperature.

Further West the North-West or antetrade wind comes apparently from that part of the equatorial regions occupied by the Atlantic, and therefore reaches the western districts of the Colony moisture laden. This wind is the cause of the Western Province winter rains.

Arum Lilies.

The Midland districts seem to be connected with the eastern rainfall, getting their principal supply in summer, but reaping the benefit of the thunderstorms which proceed from a North-East direction. It is upon these thunderstorms that the Karroo and Bushmanland solely rely for the showers which rarely irrigate these parched soils.

In the Karroo the bush thins out into a very scanty vegetation interspersed with plants of a succulent character.

The longitudinal troughs or terraces formed by the mountains running parallel to the coast are much more fertile in character than the plateaux, and the vegetation becomes more verdant as it comes within the area of the ocean winds and monsoon rains, especially towards Natal, where it receives the full benefit of the warm Agulhas current, and assumes a sub-tropical character; but on the Western coast the grazing and forest land shorebelt is replaced by an arid sand strip washed by a cold sea current.

CAPE FLORA.

The new comer to the Cape will be struck by the wonderful diversity exhibited in the plant life of the country. The conditions of heat and of moisture vary so much, apart from the prime difference of East and West monsoons (to use the Indian expression), that the variations of the plants in suiting themselves to their surroundings are almost endless.

Of the 200 natural orders into which, following Bentham and Hooker, the plants of the world have been divided, 142 are represented in South Africa; while Australia, which is five times the area of extra-tropical South Africa, has only ten additional orders, or 152 in all. The number of endemic genera in South Africa is 446, while in Australia there are 520.

The relationship of the flora of the South-Western region of Cape Colony to that of South-Western Australia is very striking, the natural orders being very much the same. There are, however, very few identical genera in the two countries, and no identical species. At some very remote time Australia and South Africa perhaps belonged to a great southern continent, the central part of which has become submerged—a time so vast that most of the genera and all of the species have become materially modified, although they may yet be classed under

natural orders common to the two countries. The adaptability of the indigenous flora to South African conditions may be illustrated by the slow progress which has been made by about 200 species of plants belonging to foreign vegetation which have been introduced. Most lurk by roadsides or near human habitations. Few are found in the open country or are making headway against the indigenous flora. The prickly pear or *Opuntia*, and the *Argemone Mexicana* or Bathurst Burrweed, are, however, striking exceptions; but as a rule the Cape grows its own weeds.

It is natural for plants as well as animals to have periods of activity and periods of quiescence or rest. In cold localities the period of rest is winter, when of the requisites for plant growth a sufficient degree of warmth is not obtainable. The South African botanical winter is far less due to cold than to deficiency of moisture. In the south-western district the period of rest is during the droughts of November till May—a time of great heat and brilliant sunshine, which, if associated with humidity, would produce a most luxuriant tropical vegetation. In the drier districts the period of rest is longer, and conforms more to what Europeans regard as the natural order of things, owing to the absence of winter rains. The rainfall is, as a whole, so deficient and uncertain, that vegetation has developed various means by which long periods of dry and scorching weather may be endured without serious consequences, and has provided resources which can be drawn upon at the shortest notice, to enable the plant to fulfil its procreative functions during a brief period of prosperity. One means of self-preservation is secured by restricting the expansion of the foliage. This applies to the great majority of Australian and Cape plants. The leaves of some genera are merely green needles, with a hard cuticle almost incapable of passing moisture outwards ; others, including the heaths, have each leaf rolled backwards upon itself, so that it becomes cylindrical, and protects the stomata or breathing pores within from the sun and wind.

Another great family, the *Mesembriaceæ*, including much of the succulent flora of the Karroo, accomplish a similar object by developing fleshy leaves, an admirable provision of nature in the interests of herbivorous animals, which not only find therein attractive and nourishing food, but also a sufficient amount of juice to enable them to exist with a minimum of water. Others,

again, lay up stores of plant food and moisture in the form of bulblets, callosities or enlargements, great and small, on their fibrous roots. The numerous species of *Oxalis* are good examples. The store of nourishment laid up in this way from the accumulations of the previous season make the plant independent of everything but the early winter rains which are necessary to wake it up to its year's life-work. It is in virtue of such devices of nature, by which the scarcity of one season is supplied from the bounty of the preceding one, that the desert aspect which the Colony periodically assumes is, as if by magic, changed into that of a flower garden by the advent of the seasonal rains.

Bulbous plants and others with huge fleshy roots or stems are obviously best provided with this balance of food-material, lying untouched during the dormant dry period, yet ready to be lavishly used upon demand. They may be said to give a character to the veld of the Cape, at least to that of the south-western district, and are as common as daisies or buttercups in northern Europe.

Once all these plants stood high in favour among horticulturists in Europe. For fifty years, embracing the end of the seventeenth and the beginning of the eighteenth century, there was a rage in Europe for Cape plants. Subsequently came the fashion of palm and orchid culture. The hot moist atmosphere of the tropical conservatory was incompatible with the life conditions of the temperate Cape flora, and by degrees the old-fashioned "Cape house," with its characteristic bulbs, its proteas, heaths, diosmas, oxalises, and irids, disappeared. The rising school of gardeners demanded something tropically gorgeous, and a thermometer up to 80°. By this freak of fashion hundreds of lovely Cape plants became lost to European gardeners. It is only within the last eighteen or twenty years, that they have come again into notice and culture, and have gained part of their former popularity.

Of other gay plants, the numerous species of terrestrial orchids take a foremost place in the gorges of the western mountains. Conspicuous among these is the *Disa grandiflora*, the finest representative of the genus in the southern hemisphere. The so-called "Arum lily" (*Richardia africana*), with its pure white bugle-shaped spathe, is the most conspicuous adornment of

low-lying moist land. On the summits of the Zwartberg range the showy white everlasting flower, *Helichrysum vestitum*, grows abundantly. As much as 200,000 lbs. weight of dry flower-heads has been sent from Caledon district in one season. In 1895 the price was 9*d*., and the year before 1*s*. 6*d*. per lb., but it has dropped as low as 4½*d*. The flower-heads are collected by children and all sorts of frail and needy people from September till the end of December, and about 2,000 flowers go to the pound weight of the product ready for market. They are used largely for church decorations and immortelle wreaths. In Russia they are much patronised by the Greek Church. The great European markets are London and Hamburg, from whence they are distributed to all parts of the Continent.

Next to the bulbous plants, the heaths are conspicuous for number and variety of forms. They are, similarly, most numerous in the south-western district of the Colony. "Of 784 *Ericaceæ* described by Bentham in the 'Prodromus,' 455 belong to the Cape," but "only about half-a-dozen representatives are found east of the meridian of Port Elizabeth." In a few localities, on isolated mountain-tops, nearly up to the tropics, lingering species of heath may be found in the central upland plateau. *Proteaceæ*, as their name implies, vary into three very different types, which would hardly be recognised as relations at first sight. The Suiker-bosch, the Kreupelboom and the Silver tree are well-known examples. The first is a *Protea*, the second *Leucospermum*, and the third *Leucadendron*.

A peculiarity of the South African flora is the large number of the slower-growing trees and bushes which are protected by numerous hard, sharp thorns. If not protected by some means, they would be seriously injured by the animals living too freely upon them in times of scarcity. Other means of protection are employed in rare instances. A wild variety of the water-melon, *Citrullus vulgaris*, Schrad., seen lying about on the veld, is quite safe from extinction, owing to being intensely bitter. There is, however, another variety, indistinguishable in appearance, but with perfectly tasteless pulp, found abundantly in the northern Karroo, and throughout the Kalihari. Without its service, that waterless tract would be for part of the year quite impassable for a waggon-span. The oxen eat the watery pulp, and sufficiently quench their thirst.

Most of the valuable fodder bushes of the Karroo give off an aromatic perfume when bruised between the fingers, and the flavour appears to be appreciated by both sorts of stock. The mild degree of bitterness which characterises the extractive matter of some plants is rather appreciated than objected to by them. The plants which the animals neglect are deficient in these characteristics.

This is noticeable in a little bush known as the "good Karroo," which covers enormous stretches of level country. It is the celebrated *Pentzia virgata*, which has in recent years been distributed widely to countries possessing arid plains, resembling our midlands. It wants no culture, and for luxuriant growth simply requires to be let alone for a season. Unhappily, the obvious wisdom of intelligent use alternating with a period of rest is too rarely put into practice, and the plant is browsed down into close bushlike cushions, separated off from each other with hollow water-ways worn by the sheeps' feet. Even in such case, if the overstocking ceases, and the plant gets a year's respite, it sends out multitudes of long suckers from the base of the stem, and every one of these, if it touch the silt brought along by the rains into the devious tracks made by the sheep, will throw out roots and start another plant to stop the channels and turn the water out on the open. Had the Egyptians of old time had the *Pentzia* in their dry and thirsty plains, they would have held it sacred, even as they did the homely onion for far less valid reasons.

Rhenoster bush, *Elytropappus*, is a worthless and obtrusive plant which has spread all over the Colony, starting from its original home in the plains south of the Langeberg. It speedily covers cultivated land which has been left for a bare fallow, and has to be cleared off and burnt when work recommences. It has spread more widely and more quickly than intrusive plants generally do, on account of its having been carried through the Colony by the brandy-distilling Boers of old time, who used it as dunnage in packing the casks on their waggons. The Government was at one time urged to legislate for its eradication. Its presence is not an unmixed evil. Where it supplants valuable fodder plants it is objectionable, but where it occupies a surface which would otherwise be bare it is productive of some good. It prevents the washing and blowing away of loose surface

soil; it gives shade and shelter to grasses and other useful minor plants, while all the time it is adding to the accumulation of valuable plant residues in the soil.

The veld is familiarly classified into sweet (*zoet*) or good veld, sour (*zuur*) or poor veld, and half-and-half (*gebroken*) veld, occupying an intermediate position in the matter of quality. To a stranger it is a little difficult at first to realise what guides an observer in classifying a given area. These terms refer to the nature and quality of the natural plant-growth, with which the climate has much to do, excessive heat and want of moisture rapidly hardening the herbage of the grasses into indigestible fibrous waste. On deep rich alluvial soils, or on land of good quality, "good veld" generally predominates, and the food-plants are fairly succulent. On thin or poor soil plant-growth is inferior. Generally speaking, some essential plant-ash constituent, particularly bone-earth (phosphate of lime), exists in far too small quantity for the vital needs of the stock. Hence animals brought from sweet veld suffer from what is termed "veld-sickness," which results from insufficient nutrition, and the hard and irritating nature of the food consumed. Those reared on sour veld thrive after a fashion, but are liable to suffer from what is known as *lam-ziekte* (lame-sickness), which results from this same want of enough lime-phosphate in their food to make their bones strong and healthy. In bad cases they lie down and cannot be induced to rise. They may be kept alive for weeks if food be brought to them. It is unfortunate that a widespread impression prevails that *lam-ziekte* is produced by some poisonous plant, at the identity of which many wild guesses are made. Where the food is very coarse and inferior, the incisor teeth wear quickly, and not only do they become short, but the spaces between them widen, and they become pointed. At certain seasons too they loosen, and the animals cannot feed properly. The worst of the sour grass veld, situated within a range of about forty miles from the coast, is regularly burnt off to clear the surface of the remains of the previous year's growth before the spring grass appears, and sheep farmers say it would be impossible to keep sheep if the pasture were not treated in this way. It may be perfectly true that burning improves the quality of the early grass, but over a considerable area a more profitable and more satisfactory way of disposing of the excess

of vegetable growth of one year before the next begins to spring, would be to make it into silage. It ought to be cut while green, before it becomes fibrous, and put into large circular stacks, twenty feet in diameter, the building being carried on slowly to permit the stack to settle down after a temperature of 130° F. has been reached. By this procedure sweet and not sour silage will be the resulting product. With a stack of this size the material itself does the work of weighting for all but the top layer, which can be planked over and weighted with sandbags.

Silage, given in moderate quantities (40 lbs. to 50 lbs. a day to a horse or an ox), is a safe and palatable food for all classes of farm animals, and being of a succulent nature, is of special value during periods of drought, particularly to she-goats, ewes, and cows giving milk. It has a decided advantage over roots and the common green forage crops, in that it will remain good for a number of years if not wanted, and frost cannot injure it. Of course inferior grass is not improved in quality by being made into silage. The process, however, takes it at its period of greatest succulence, just as the culm is rising, and fixes it at that stage as a stand-by in case of scarcity.

One of the great defects of the vegetation of Cape Colony is that it does not fully occupy the surface of the soil with a close and dense cover—a condition so familiar to every one in Great Britain. Even in the districts where grass grows it is found in tufts with intervening spaces of bare soil. This uncovered and unprotected condition permits the washing away of the surface, and is largely responsible for the nakedness of aspect peculiar to much of the veld. The periodical burning of grass rather aggravates the consequences of the wasteful process of denudation. Sheep, goats, and cattle following each other in line, make paths through the veld which, under the potent influence of heavy rains, soon wear into water-ways and finally into sluits. Thus the finest portions of the soil are carried off into the rivers. The land cut up in this way does not get its fair proportion of moisture from the rain which races away down the sheep-tracks instead of sinking into the soil. Much of the mischief could be prevented by a little labour expended in stopping channels immediately they begin to form by means of banks of sods. The water thus brought to rest soaks into the ground, and adds to the

store of moisture, conserved against the rainless season. The work of checking the too rapid flow of water is notably assisted by the sucker-growth of the *Pentzia*, as has been noted above.

CAPE FAUNA.

When South Africa was exploited by the first Boer hunter and trader in skins, it was found to contain a fauna exceptionally abundant not only in number but variety, while many of its most striking forms were restricted to that region.

The striped equidæ were particularly characteristic of South Africa. Still more singular were the aarde-vark, the giraffe, and the gigantic pachyderms, archaic in structure, like the mammoth and the mastodon of the geologic record.

Especially was the country rich in its wonderful profusion of antelopes, including such beautiful and noble forms as the springbok, migratory in locust-like hordes; the eland and gemsbok, which subsisted in the waterless districts of the Karroo and Bushmanland; and the blesbok and hartebeest, which scoured the grassy and undulating plains of the eastern districts in company with the ostrich, the quagga and the fantastic wildebeest.

Since then the work of destruction has gone on apace, assisted by many a keen sportsman from Europe; and only of late years have efforts been made to arrest the process of extermination.

Special protection is now accorded, by Act 36 of 1886, to the Elephant, Hippopotamus, Buffalo, Eland, Koodoo, Hartebeest, Gemsbok, Bontebok, Blesbok, Rietbok, Zebra, Giraffe, Burchell Zebra, Gnu or Wildebeest, none of which may be shot without special permission of the Governor.

The Game Act also provides for close seasons, and in addition the killing of all game in any given district, when it is getting scarce, may be prohibited for a term of years. Special kinds of game are also protected temporarily.

Nevertheless, of the elephants that used to roam in great droves over the wooded and forest-covered districts, only two small herds in the Knysna Main Forest and the Addo Bush are preserved by the Government, and that inefficiently, since any owner of a mealie patch may shoot one of these animals on pretext of its breaking down his paltry fence.

The rhinoceros, once common not many days' journey from Cape Town, where one of these animals upset Governor Van der Stel's coach, and the hippopotamus, last seen in the Berg River, when its homicidal practices necessitated its slaughter—are both now extinct in the Cape Colony. The buffalo is also approaching extinction, a few still being found in Albany and adjacent districts.

The bontebok, preserved for the owners' gratification on a couple of farms in Bredasdorp, only exists on sufferance. Koodoo and gemsbok are, however, still plentiful, the former preserved by the farmers on whose land they run, the latter by the inaccessibility of the waterless region in which they dwell.

The eland is now only known in the colony as a domesticated animal on one or two private estates like Groote Schuur or the property of Mr. Booysen at Graaff Reinet.

Among the smaller mammalia the golden moles and jumping shrews are peculiar to the country.

Polecats, otters, wild cats, are stealthy foes of the keepers of poultry; but the predatory animals which are most harmful to the farmer are the Cape hunting dog, the jackal, and the baboon, both of which latter kill the young lambs in great numbers. The baboon affords a curious case of perverted instinct resembling that of the Kea parrot.

The leopard is still found all over the country except where the population is thickest. The lion, if found at all, must be sought only along the borders of the Orange River; in the last generation it was known still to haunt the Stormberg Spruit.

The ostrich in its wild state is becoming rare, and is but insufficiently protected by law. Ostrich-breeding has become a farming industry.

The chief game birds protected by the Act are the three francolins, known locally as the pheasant and the red-wing and grey-wing partridge, the paauw and the korhaans, grey and blue. The quail being migratory, is exempted from the Game Act. Among birds of plumage we may name the golden cuckoo, the loorie, the scarlet and yellow finches, and the kingfishers.

The wings of the blue crane formed the imposing headdress of the Bantu warrior. The white stork of Europe is known here as the "great locust bird," and the spreeuws, or glossy starlings, are also serviceable as destroyers of noxious insects. The

berghaan, the aas-vogel, and the secretary bird may be selected as representatives of the raptorial birds. Pelicans and flamingoes haunt the vleis and coast lagoons; the duiker, the penguin, and the malgas, or gannet, yield the local supply of guano.

The snakes of the Cape Colony are not so to be dreaded as those of India or America. The most poisonous are the sluggish puff-adder, the cobra, and the irritable ringhals.

Many edible fish are to be found round the coast, such as the sole, the snoek, elf, panga, steenbrasem, kabeljauw, stokvisch, geelbek, &c., &c. The Agulhas bank has been lately proved to be a rich fishing ground.

The Colony is well supplied with insects, chiefly of a noxious character. The locust ranks first as destructive to vegetation. There are two migratory species, known from their colour as "khaki" and "red-winged" respectively. The peach-fly, the codlin moth, the pear-slug, the phylloxera, the woolly aphis, the cottony cushion scale (*dorthesia*), and red scale vex the fruit grower and agriculturist.

Scorpions and the tampan are dreaded by man, while ticks infest the pasturage and are found not only to harass the live-stock, but to convey the infection of such stock diseases as redwater and heartwater.

The tsetse fly is not found within Colonial boundaries.

THE NATIVES OF SOUTH AFRICA.

The natives of British South Africa for the most part belong to the Bantu race. There is a considerable mixed population in the western districts of Cape Colony; but with this exception the Bantu element is almost everywhere predominant.

As regards their social development, the Bantu peoples fall into two classes: (1) those who have retained their old tribal institutions; and (2) those who have been incorporated into white communities. The former class, or the *Tribal Bantus*, are to be found in the native reserves of the Transkeian territories of Cape Colony, Basutoland, parts of Natal, Zululand, the North Transvaal, Rhodesia, and Bechuanaland. The second class, or the *Detribalised Bantus*, are scattered over the greater part of the rest of South Africa, particularly in the east of Cape Colony proper, Natal, the Transvaal, and the Orange River Colony.

In addition to the native population above mentioned, there is, both in Cape Colony and in Natal, an important coloured population which has immigated from over sea. In the seaport towns of Cape Colony the *Malays* are an interesting relic of the Netherlands East India Company. They are now so mixed with other elements that the term "*Malay*" is somewhat of a misnomer; and they might perhaps more accurately be described as "Mohammedans." Their common faith, together with their peculiar habits, costume, and social position, make them a distinct and conspicuous section of the community.

The Bantus are primarily agriculturists; under their national mode of life they have few incentives to work; their traditions tend to make them despise it. When they seek employment, it is usually for short periods, and at seasons when they are not engaged in agriculture. Many of them show a strong dislike to underground work at the mines.

Nevertheless, the growth of population and the awakening of new wants are causing a great and increasing number of natives to seek employment. Practically all the rough manual labour of South Africa is done by natives, and, when trained, they often prove competent workmen, capable of skilled labour.

NATIVE LABOUR.

The agricultural labourers on the South African farms are almost all natives or coloured people, very few whites being employed in this capacity. The usual remuneration for these labourers is from 10*s*. to (in some districts) 20*s*. a month, with rations and sleeping accommodation, and sometimes pasturage for a few head of cattle. The rations consist of mealies, with, in some cases, milk and meat two or three times a week. In some parts wages are largely paid in stock; and on the wine-farms in the Western Province of Cape Colony labourers are nominally paid about 2*s*. a day, but half of this is often paid in wine—a practice which is undoubtedly very mischievous. In some districts of Cape Colony a system of produce-sharing prevails on the farms, and wages are seldom paid. In such cases the natives are allowed to squat on their employer's land, in return for a share, sometimes amounting to as much as a half, of the crops from the land allotted to them. They also do

the necessary manual work on his farm. On the northern frontier young men sometimes work for rations, and receive a heifer (worth about £3) at the end of a year. Natives living on private lands frequently pay rent for their huts, varying from £1 to £5 a year, and, where a low rent or no rent at all is paid, they usually contract to supply labour on the farm.

On Dutch farms in Cape Colony, farm labourers frequently give their work in return for leave to settle on the farms; in some cases they receive further remuneration in the form of a small wage or a payment in cattle at the end of the period of service.

The drain of labour to the mines and railways, and the attractions of higher wages and lighter work in the towns, have caused a great scarcity of farm labourers in some districts, and in consequence there are many complaints by farmers of the difficulty of getting men to work for them. The native custom for the women to do the hard work in the fields may cause a prejudice against agricultural labour amongst some of the natives; but the low rates of wages usually offered by farmers, and the bad reputations of certain employers, are probably the main causes of this dearth of labourers.

Domestic Service and other Occupations.

Many natives and coloured people find occupation in domestic service. In Cape Colony the average wage for males is stated to be £1 1*s*. 2*d*., and for females 13*s*. 4*d*., a month, with board and lodging. The remuneration, however, varies greatly; many servants in the towns earn much more.

Comparison of Wages paid to Whites and Natives.

Although the natives are mainly engaged in work requiring little skill, they are not incapable of attaining to higher positions. With the advantages of education, they are already beginning to compete with the whites as clerks and skilled artisans, and some of them earn good wages (*e.g.*, a native carpenter in the Native Territories of Cape Colony can earn from 5*s*. to 7*s*. 6*d*. a day). It is clear that many of the natives can be taught to do skilled work. Special attention was drawn to their capabilities in this respect in the evidence given before the Transvaal Industrial Commission of Inquiry, 1897.

As a rule whites are not engaged in rough, unskilled work, and it is difficult to compare the rates of wages received by them with those paid to natives. Where the rates are comparable, it would appear that the white man can usually obtain from 25 to 50 per cent. more than the native for work of the same kind, and in some cases the difference is still greater. This disparity in remuneration, however, would seem to be much less in some districts than in others, and a correspondent, writing from Port Elizabeth, states that "in these parts a coloured tradesman, if equally competent, gets equal wages to the white man. Quality of work rather than colour of skin counts"; and a similar statement would seem to be applicable to other parts of South Africa.

Where the work is of a rough character and the native has had some experience in it, he appears to be often capable of doing more than the white. Generally speaking, however, the native workman requires much more supervision than the white, and this to a large extent accounts for the difference in wage. It would appear also that, although his earnings are usually on a lower scale than those of the white, he is, as a rule, owing to his simpler mode of life, able to save a larger portion of them.

The Formation of Contracts of Service.

No contract of service made elsewhere than within the limits of the Colony shall be of force within the Colony, unless made in writing and certified by the British consul or other similar officer at the place where it was made; but contracts not so certified shall have force in the Colony upon other proof of such contract to the satisfaction of the magistrate before whom the same shall come in question. Every contract of service, whether oral or written, unless otherwise provided, shall, with certain trifling exceptions, be taken to be for one month: and no oral contract shall be binding for more than one year. The same limit of time is set to the operation of a written contract, except on certain conditions; that is to say, unless the contract is signed with the name, or, in the case of illiterate persons, with the mark, of the contracting parties in the presence of a magistrate or officer, who has to satisfy himself by inquiry of the servant or apprentice that the contract was entered into voluntarily

and with a clear understanding of its meaning and effect. The magistrate having ascertained this, it is his duty to sign the contract in attestation of the fact. No contract, even if executed with these formalities, can be valid or binding for a longer period than five years ; and contracts so entered into before a magistrate must be as nearly as possible in accordance with a statutory form.

In the absence of special agreement, a month's notice is required before a contract shall be deemed to have expired. There are certain regulations as to the supply of food and lodging where servants are hired to reside on the premises, as to the determination of the rate of wages when not specified, and as to provision in case of sickness. All contracts of service stipulating for the services of the wife of any servant are to be executed by her in a similar manner. Parents are given a qualified authority to contract for the services of their children until they attain sixteen years of age.

MASTER AND SERVANTS ACTS.

Generally speaking, the death, insolvency, and change of residence of the master determine the contract of service and apprenticeship, with certain exceptions, one of which is that the widow of a deceased master may adopt the contract of service.

The resident magistrates have jurisdiction in all cases between masters and servants and apprentices; and any servant or apprentice may be fined any sum not exceeding £1, and in default of payment may be imprisoned with or without hard labour for any period not exceeding a month, in case he commits any of a great variety of offences, and generally if in any way he breaks or acts in a manner inconsistent with his contract. A repetition of the offence, and certain offences of a more serious nature (such, for instance, as lead to damage of property), may be more severely punished. Children under the age of sixteen are, however, not liable to the infliction of these penalties, and no imprisonment is allowed for any continuous period exceeding six months.

The resident magistrates have also jurisdiction to inflict penalties on masters in certain cases, such as withholding wages, refusing to deliver a servant's property, or failing to supply

articles stipulated for in the contract. The contract may be cancelled if the master has not performed his part, or where he has been convicted of an assault upon a servant or apprentice. In any case, moreover, in which a master appeals from the decision of a magistrate, it is the duty of the Attorney-General to argue the servant's case before the Supreme Court.

Respecting Characters given by Masters to Servants or Apprentices.

It is sufficient, under this head, to observe that (as under English law) no master is bound to give a character to any servant or apprentice.

Respecting the Constraints of Masters, Servants and Apprentices.

The Act of 1856 defines certain offences incidental to the contract of service, such as unlawful interference with servants or apprentices in order to prevent them from entering into or completing their contracts, and fixes penalties therefor.

The above is the framework of the principal Act, which has been at various times amended and supplemented, *e.g.*, by the following statutes: No. 18, 1873; No. 7, 1875; No. 35, 1886; No. 30, 1889. A brief summary of the effect of these statutes will show the tendency of modern legislation on this subject.

The Act of 1873 is chiefly concerned with the punishment to be inflicted on servants and apprentices for acts of misconduct on their part, and the effect of its provisions has been already referred to. The Act of 1875 also enlarges the power and authority of a master by enacting that, if a master alleges matter of complaint for any offence punishable under the Law of Master and Servant, and deposes that the apprehension of the servant is necessary to secure his appearance, the servant may be apprehended on a warrant. After the passing of this Act, the law appears to have remained unchanged for eleven years, until in 1886 an Employers Liability Act was passed, containing provisions similar to those which regulated the liability of masters to servants in England at that time.

The next important statute dealing with this subject was passed in 1889, and extended the jurisdiction of the magistrates

over servants and apprentices other than those employed on farms. Servants of this class had hitherto been placed in a more favourable condition than farm servants ;, but the Act of 1889 assimilated the law applicable to both, and gave the magistrates jurisdiction to punish servants and apprentices generally for certain offences under the Law of Master and Servant by imprisonment without the option of a fine.[1]

THE CAPE FARMERS.

It is probable that no truer words were ever spoken than those used by Professor MacOwan in giving his evidence on agricultural schools before a Parliamentary Select Committee in 1894, in reference to the condition of Cape farming twenty-four years ago, when he remarked that only a very small portion of the agricultural population was at all comparable to the educated agriculturists and stock farmers of Victoria and New South Wales—countries whose products were about the same as our own. Still less was it comparable to the average English and American farmers above the peasant class. It could not be otherwise. In two centuries of settlement, the solitary life of the South African farm, absence of neighbours of superior attainments, the intermarriages within a very limited horizon, and, until the last fifteen years or so, the want of cheap and extensive railway intercourse, told disastrously upon the average farm intellect. It had become narrow, stolid, immovable, or, if constitutionally active, then conceited and unteachable. Given the same conditions, the same results were inevitably produced in every country under the sun, and it was unworthy of sensible men to gird at the Cape farming population for being what circumstances had made them. The general advance observable within the last fifteen years of change, was not far behind what a judicious forecast would have predicted. The railway had decidedly been the most potent factor. Since Professor MacOwan gave his evidence a few momentous changes in the right direction have occurred, and probably we are now actually at the

[1] For these remarks on the Native population and Native labour, we are indebted to the "Natives of South Africa, their Economic and Social Condition," edited by the South African Native Races Committee, and published by John Murray, London, 1901.

threshold of far-reaching national development. The backward condition of the farming industry is all in favour of the new settler, and his advent will be all in favour of the present farming community; the settler bringing with him and introducing, as he will, modern methods and modern implements, and by his successful use thereof, affording the Africander farmer free object lessons that will encourage new departures on his part. He may thus, with the greater advantages that his knowledge of the country gives him, enter into friendly and successful rivalry with all new comers—the more the merrier; and in this light alone, it would be absurd to attach any importance to the statement that has occasionally been made, that the Africander farmer will resent the introduction of fresh industrial population.

In the olden times, as far back as the middle of the eighteenth century, and throughout that period up to twenty-five years ago, the irrigation of fields and garden plots on a large scale was an industrial feature of Cape Town and its suburbs. Every large property had attached to it a water right, which was freely used by the owners or occupiers for irrigation purposes. The distribution was regulated by legislation. An important official styled a Water Fiscal or Water Sheriff was responsible for this distribution, and so rigid was the law that placed in his hands the turning on and off of the water, that no man dare even turn it off on his own account; nor must he turn off the water of his neighbour, but the Water Sheriff, no matter how grumpy or pompous he might be, must be brought to the spot for the purpose. Great was the tyranny practised by this functionary, and awful the terror he inspired in the minds of the frugal water-users; for the longer the water ran the more the irrigator had to pay, whether he liked it or not, and nobody dare chide the Fiscal if he lingered by the way, nor prod him when he did so linger. The gardens irrigated, as well as the fields, were principally planted with produce and were of tremendous extent, usually running right up to the foot of Table Mountain.

Here, probably, may be located one of the birthplaces of the first farmer irrigators who would cross the country from the mountain to Tulbagh and settle down in the Breede River Valley. Others would follow to Worcester, Robertson, Swellendam,

thence into the Karroo, and ultimately throughout the Colony, all carrying with them the practical knowledge and appreciation of water conservation and its economical use on their farms; so that in course of time the present line of irrigators were found settled in the watershed into which the rains and mountain streams were precipitated on both sides of the country. It is rare to find a farm occupied by a descendant of the old settlers that is located beyond the reach of a regular water supply, no matter how meagre. The visitor to an apparently arid tract of country is shown by the farmer a tiny stream of water trickling into the homestead mysteriously from the parched-up veld beyond, and our host explains that it is part of a mountain stream that first traversed the farm of his friend many leagues away, was then directed by him on to the land of his next door neighbour, and by the latter sent on to the farmer, Van Dyk.

It seems, then, that Colonial farmers owe an aptitude for irrigation to their progenitors in ages past. It is laid down by expert irrigationists that the success of a national scheme of irrigation greatly depends upon whether the population has an aptitude for that method of cultivation or not. A glance over the following pages will confirm the opinion that the Cape rural population possesses the necessary qualification, whatever else may have been said of their farming methods. If we read the signs of the times aright, a vigorous irrigation policy will ere long be pursued in agricultural South Africa, and the presence in our midst of a community of practical, rough-and-ready irrigators is, indeed, an important matter. During the journeyings of the writer through the various districts described in this book, he was met in all directions by intelligent overtures for the advancement of capital to construct storage works upon sites that could probably not be better selected by the Chief Inspector of Public Works himself, and the promises to keep the works going, and make proper use of the water were often backed by good evidence of ability to do so.

In the above connection it is difficult to avoid reference to the report of Mr. W. Willcocks, the eminent Irrigation Engineer, upon irrigation in South Africa. Referring to the Oudtshoorn district, which he calls the garden of Cape Colony, he noticed that every perennial spring of any magnitude was utilised as

completely as he had ever seen water used. Take the Grobelaars River Valley, for instance; this stream is fed by springs which rise in the Zwartberg, and at the junction of the Grobelaars and Le Roux Rivers had a discharge of ten cubic feet per second the day he crossed it, after long-continued drought. This discharge was utilised in the irrigation of 2,400 acres of cultivated land. This land was so thoroughly irrigated and saturated that the discharge of the Grobelaars River near Oudtshoorn below these 2,400 acres, was on the same day twelve cubic feet per second. Not only were the perennial springs there utilised, but the Oliphants River floods were utilised in a way that Mr. Willcocks had not expected in South Africa from his previous readings. He made complimentary remarks upon the irrigation enterprise of other districts.

THE CAPE WORKING-MAN.

At the present time Cape Colony is the paradise of King Working-Man. There are no Trade Unions to say how long he shall work, regulate his wages, or dock his earnings for contributions to Union funds. In some other British Colonies, the influence of these Unions has made the working-man an automatic tyrant to carry out the despotic propaganda of his Union. There his industrial creed is "eight hours work, eight hours play, eight hours sleep, and eight bob a day," and to diverge in the least from any of these articles would be to incur the loss of his daily bread and social ostracism from the society of his fellow workmen, without a chance of obtaining employment within the influence of the ubiquitous Trades Unions. In Cape Colony he is merely a king; may he, for his own sake, and that of the country, for ever eschew Unions and remain but a king. At present he can live well and thrive, and if he will but carry with him two qualifications, namely, sobriety and diligence, he will some day become independent. Particulars of wages, and other things interesting to the rank and file of the community, are given in an appendix at the end of this book; but the efficient artizan who intends to give his employer the fairest day's work a man can give, and, mayhap, a little beyond, can frequently, in a prosperous community, "come to terms" for doing special work, and hence arise such occasional fluctuations as cannot of

course be indicated by a table of figures. In what is virtually a new country the capable go-ahead working-man often emerges quickly from the journeyman stage into the position of a master, and, as a perusal of the following pages will show, there are probably many opportunities for such developments.

CHAPTER II.

CROWN LANDS AND LAND LAWS.

According to latest calculations, the area of the Cape Colony is 276,995 square miles, or 177,376,660 acres, including Native Territories and Walfish Bay. As no general survey of the Colony has been made it is impossible to state exactly the area undisposed of; but as the quantity of land alienated up to the end of 1901 was about 129,166,138 acres, there appears to remain undisposed of about 48,210,522 acres (equal to 22,777,892 morgen: 1 morgen—2·1165402 acres). This area is exclusive of the Railway Land Grant in the division of Vryburg and Mafeking, which was undisposed of at the end of 1901, in extent about 2,832,056 acres.

All the most valuable Crown Lands in the Colony have been parted with under the various Land Laws governing their disposal, and the bulk of the remainder consists of areas in the divisions of Barkly West, Caledon, Calvinia, Ceres, Clanwilliam, Hay, Humansdorp, Kenhardt, Knysna, Oudtshoorn, Prince Albert, Riversdale, Uitenhage, Van Rhynsdorp, Worcester and Ladismith. These remaining lands are inconveniently situated on the flanks of mountain ranges and only valuable for grazing, or they are subject to periodical drought and offer very little attraction to new comers.

In the divisions of Gordonia, Mafeking and Vryburg (formerly known as British Bechuanaland) there are wide tracts of land still available which, in spite of dearth of water, are held to be eminently suitable for stock-breeding.

Those desiring to acquire Crown lands in the Cape Colony must now either compete at public auction at the sales of surveyed lands held under Act 15 of 1887, from time to time as occasion seems to demand in the various districts of the Colony, or they must apply for certain specified areas or farms which have been set aside for selection under Act 37 of 1882 or Act 40 of 1895.

Both these Acts were designed to enable sons of the soil without means, such as the sons of farmers, to obtain land without necessitating the investment of capital, and they require the applicant to select and name the piece of ground he requires, and if his request be entertained a Licence for five years is issued at a rental calculated at 5 per cent. on the capitalised assessed value of the land. Upon the termination of the Licence and fulfilment of the conditions respecting occupation and (in the case of Act 37 of 1882) cultivation, the Licensee is entitled to a title deed under Act 37 of 1882 on quit-rent tenure, under Act 40 of 1895 on payment of the purchase price in instalments extending over fifteen years, the balance of unpaid instalments and the survey expenses being secured by a mortgage in favour of the Government.

Act 37 of 1882 deals with small holdings, not larger than 250 morgen, and is suitable for districts in the vicinity of markets where "*la petite culture*" may be carried on profitably, but Act 40 of 1895 is rather applicable to cattle or sheep runs of 3,000 to 6,000 morgen in extent, and is most suitable for pastoral districts.

Under Act 15 of 1887, farms in extent varying from the cattle ranch to the market garden or town building lot are surveyed by the Government, and advertised for sale from time to time to the highest bidder at an upset price. The price is assessed at the current market value in the district, and is, of course, subject to enhancement by competition, but the terms of payment are very easy: one-fifth of the price at which the land is sold being payable within the first twelve months, viz.: one-tenth within six months and one-tenth within twelve months, and the remainder being secured by a first mortgage at 4 per cent. The balance of the purchase price may, if the purchaser desires it, be paid at once, or in portions of not less than £50 at a time. In case, however, the purchase price is less than £25 the whole amount must be paid in cash at once, or in equal instalments extending over three years and bearing interest at 4 per cent. per annum from the date of sale.

Crown land containing or presumed to contain minerals other than gold, silver, platinum, or precious stones, are leased for a maximum period of ninety-nine years, the area leased not to exceed forty morgen, at an annual ground rent of 5*s*. per morgen

and a maximum royalty of 10*s.* per ton of 2,352 lbs. of ore or mineral mixed, not less than fifty tons to be raised in any three years.

This royalty varies with the kind of mineral worked. For copper it is 2*s.* 6*d.*, for coal 6*d.*, for manganese 1*s.* per ton.

PRECIOUS STONES AND MINERALS.

Precious minerals and precious stones are reserved to the Crown except in the case of certain farms in Griqualand West held by what is known as "Free State Title." Prospecting for Gold, Silver and Platinum, and for Precious Stones, is carried out under a prospecting licence procurable at the office of any Civil Commissioner, for a period not exceeding twelve months. The licence costs 2*s.* 6*d.* per mensem, and gives the holder the right to prospect throughout the Colony on Crown land and, subject to the consent of the owner, on private property. The prospecting area under the Precious Minerals Act is a rectangular figure 7,500 feet long by 800 feet broad; under the Precious Stones Act it is a circular area of 1,000 yards in diameter. The prospector has exclusive rights within his area; grazing privileges for certain stock on Crown land and the right to take wood and water for domestic use are also secured to him. A prospector making a discovery must give notice to the Civil Commissioner of the division in which the find has been made, and is entitled to select a certain number of claims, which remain free of licence as long as held by him. A bonus of £5,000 is offered to the first discoverer of a Gold Reef or of an Alluvial Gold Digging on certain conditions.

POPULATION.

The total population of Cape Colony, according to the census of 1891, was whites, 386,812; Malays, 13,907; Natives, 1,335,020; total, 1,735,739, with an average density of 8·1 per square mile, varying from 0·52 in Calvinia to 146·73 in the Cape district. The proportion between the sexes among the whole was 92 females to every 100 males.

The *estimated* population in December, 1900, including Griqualand West and Native Territories, was 2,349,900 persons.

PUBLIC DEBT, REVENUE, EXPENDITURE.

The Public Debt at the end of December, 1899, amounted to £31,409,755, on which the charge for interest and sinking fund was 4 per cent.

Of this amount £20,516,650 has been spent on Railways, £3,815,457 on Harbours, and £34,168 on Irrigation.

The revenue for the year 1899—1900 was £6,326,274, the expenditure £6,677,651. For the preceding four years it stood as follows :—

	REVENUE.	EXPENDITURE.
1895—96	£6,803,802	£5,561,325.
1896—97	£7,389,966	£6,852,385.
1897—98	£6,536,475	£7,082,255.
1898—99	£6,317,574	£6,803,041.

BANKS.

The Post Office Savings Bank had 313 branches open in 1900 with a total for the deposit of £1,570,290, as compared with £266,000 in 1887. The rate of interest allowed is $3\frac{1}{3}$ per cent. up to about £600, and 3 per cent. on Savings Bank Certificates up to an additional £1,000.

General banking business is conducted by the Standard Bank of South Africa, the Bank of Africa, the African Banking Corporation, the Robinson South African Banking Company, and the Stellenbosch District Bank; with some 114 country branches.

IMPORTS AND EXPORTS.

The imports and exports from the Colony for the five years, 1896—1900, are shown in the following statement :—

YEAR.	IMPORTS.	EXPORTS.
1895—96	£16,647,762	£16,971,967.
1896—97	£18,244,425	£18,210,869.
1897—98	£16,916,315	£22,191,019.
1898—99	£16,488,323	£26,317,313.
1899—1900 ...	£14,410,134	£12,092,994.

A DECADE OF EXPORTS.

Fruit.—In 1891 Cape Colony exported less than £1,000 worth of fruit; five years later this reached about £4,500, and in 1901 the amount was over £9,100.

Meal exports rose from £4,000 in 1891 to £5,000 in 1892, dropped in 1893 to £3,000, and remained at that figure till 1895, when it receded to £2,000; took an upward bound to about £6,000 in 1896, reached the imposing height of £14,500 in 1898, and came down again in 1901 to £3,000. Of course, as is probably well known, this last decrease was mainly owing to the disturbed state of the country and the shutting off by war of the northern markets in the adjacent Colonies. The fluctuations generally were due to the varying seasons, and the rise and depression of prices not only in Cape Colony, but in the large grain-producing centres of the world, to which the wheat trade owes its ebb and flow.

Everlasting flowers made their mark by rising, at the starting period, from over £4,000 to £12,000 in 1892, and £20,000 in 1893; fell back to about £6,500 in 1894; rose to £11,000 in the following year and again to £20,000 in 1896; receded to £11,500 in 1897, and again attained £23,366 in 1901. The fluctuations in this case were undoubtedly caused by the varying demands of foreign markets and the occasional limited growth of a bad season.

Exports of horns starting at £5,500 rose in 1898 to £12,500, and receded to between £2,000 and £3,000 in 1901. The rocket-like rise in the year mentioned is accounted for by the collecting of horns of rinderpest-stricken cattle in addition to the ordinary supply.

Grain.—The Colony sent away £9,000 worth of grain in 1891, only about £2,000 in 1892, £11,000 in 1899, and £4,000 in 1900, and only about £300 in 1901. This drop is owing to the invasion of the Colony by the Boers, the consequent restrictions of Martial Law, and the closing of the northern markets; the former fluctuations being due to and keeping pace with the season's output at home and abroad.

Wine and Brandy have maintained a slow and sure upgrade movement; for 1891 there was exported a little over £20,000 worth; in 1896 about £25,000 worth, which, after falling again

to and remaining at £20,000 in 1897 and 1898, leapt upward in 1900 and 1901 to £37,703. Larger returns than these would probably have to be recorded, were it not that a large section of the South African public have happily begun to appreciate their own wines and spirits and consume large quantities of them in preference to the imported article.

Fish, after keeping a fairly even course for several years, suddenly took a dive in 1898 from about £20,000 to less than £16,000, rose again in 1899 to £20,000, and, scarcely waiting to take breath, plunged down to £12,000 in 1900, and again, deeper than ever, to the record depth of £986 in 1901. To-morrow may see fish up again to £20,000 or more, for mainly to the capriciousness of the tribe is due this enormous falling off prior to 1901. The same cause that brought about the fall in the export of meal in that year was disastrous to the fish. But both articles will see a speedy rebound. For the last two or three years large shoals of Snoek which frequented Cape waters and were such a popular export, have unaccountably left the shores. The stagnation in the fish trade at Malmesbury and Piquetberg is due to a like cause, viz.: the disappearance of the fish that made the market.

Hides.—From about £60,000 in 1891 the export of hides reached and remained at £200,000 in 1897 and 1898, dropped to between £30,000 and £40,000 in 1899, dropped to £12,000 in 1900, and left off at £58,566 in 1901. Horns and hides had their big rises from very similar causes, and both will probably answer to a big demand from abroad as soon as the country trade can pull itself round again.

Copper Ore started at and wavered between £200,000 and £300,000 till 1898, when, in response to the great demand that arose for copper in Europe, the two private mines in Namaqualand, which mainly represent the Colony's industry, rose to the occasion and exported £571,000 worth in 1901.

Mohair, from £350,000 reached £750,000 in 1899, but showed only £502,605 in 1901. Fashion is responsible for the boom indicated, and the fickle jade quickly dropped mohair back to a more normal condition. A continuance of the steady and gradual increase that has distinguished this product may be looked for.

Skins have had the most uneventful course of all Cape exports; starting and remaining at about £400,000 for several years and

receding during the war to about £300,000, the product left off at the close of 1901 at £389,000.

Ostrich Feathers.—It seems strange that the export of ostrich feathers increased during the late war. Starting at £475,000, they slowly crept up to and remained at about £525,000 in 1895 and 1896, and took a rapid upward turn till the export stood at about £840,000 in 1901.

Wool from about £2,250,000 in 1891 fluttered down to £1,500,000 in 1894; increased to £2,125,000 in 1899, and fell to £825,000 in 1900, and rose again to £1,489,000 in 1901. The great fall in 1900 is, of course, owing to the large stocks in Europe and low prices accordingly.

Diamonds.—Last, but not least in the list of exports, diamonds, starting in 1891 at £4,125,000, amounted in 1894 to £3,000,000 only, but next year toed the mark at £4,750,000. In 1901 the export was £4,930,104.

CUSTOMS.

The Custom duties on goods imported into the Colony are numerous but not generally heavy. On a few articles such as blankets there is a duty of 20 per cent. on the value; and on all goods not specifically stated in the tariff there is an *ad valorem* duty of 7½ per cent.

The following are some articles bearing special rates. They are selected as being of most interest to the settler.

Class I.—SPECIAL RATES.

Article.		Rate.		
		£	*s.*	*d.*
Animals, viz.: (*a*) Mules and geldings, and cattle for slaughter.	each	1	10	0
,, (*b*) Sheep for slaughter ..	,,	0	5	0
Butter, butterine, and other substitutes for butter.	per lb.	0	0	3
Candles	,,	0	0	2
Cheese	,,	0	0	3
Chicory and substitutes for coffee ..	per 100 lbs.	0	16	8
Coffee (*a*) raw	,,	0	6	3
,, (*b*) roasted, ground or mixed ..	,,	0	16	8

CLASS I.—SPECIAL RATES—(*Continued*).

ARTICLE.		RATE.		
		£	*s.*	*d.*
Condensed, desiccated, or preserved milk or cream.	per 100 lbs.	0	4	2
Corn and grain, viz.: Barley, maize, millet, oats, rye, wheat, beans, and peas.	,,	0	2	0
Flour wheaten, or wheaten meal, including pollard.	,,	0	4	6
Fish: Cured, dried, not being of South African catching.	per lb.	0	0	1
Fodder, viz.: Chaff, hay, lucerne, oat-hay and other fodder.	per 100 lbs.	0	1	6
Fruits: Bottled, tinned, or otherwise preserved.	,,	0	18	9
Fruit: Dried, of all kinds	per lb.	0	0	2
Meats: (*a*) Cooked, dried, fresh, chilled, frozen, pressed, pickled, salted, smoked or otherwise cured or preserved, but not including fresh beef, and chilled or frozen fresh beef.	,,	0	0	2
,, (*b*) Fresh beef, and chilled or frozen fresh beef.	,,	0	0	1
Oils: Not essential, perfumed or fish ..	per Imperial gallon	0	0	3
Picks and hoes (Kaffir)	each	0	0	6
Spirits: Liqueurs and cordials and methylated spirits.	per Imperial gallon	0	15	0
Sugar: (*a*) The produce of the cane, not refined, glucose, golden syrup, molasses, saccharum and treacle.	per 100 lbs.	0	3	6
,, (*b*) Not cane, and all refined sugars	,,	0	5	0
Tallow and substitutes for tallow.. ..	,,	0	4	2
Tobacco: Cigars .. .. (And in addition 7½ per cent. *ad valorem*.)	per lb.	0	6	0
,, Cigarettes	,,	0	4	0
,, Manufactured and cut	,,	0	3	6
,, Manufactured but uncut ..	,,	0	3	0
,, Not manufactured but stemmed	,,	0	2	6
,, Not manufactured and unstemmed leaf.	,,	0	2	0
Vinegar in bulk	per Imperial gallon	0	0	6
Wine: (*a*) Claret, not exceeding 20 per cent. of proof spirit.	,,	0	6	0
,, (*b*) Other than (*a*) exceeding 2 per cent. but not more than 50 per cent. of proof spirit. (And in addition 7½ per cent. *ad valorem* on all wines imported not in wood.)	,,	0	9	0

Class II.—FREE.

The following articles, among others, are exempted from payment of Customs Duties on importation:—

Agricultural implements and machinery, and all apparatus and plant usually and principally employed in farming operations.

All raw produce of South Africa and animals bred in South Africa imported overland.

All animals bred and articles grown, produced or manufactured within the Union, except: (*a*) Flour wheaten, or wheaten meal, including pollard, manufactured from other than South African wheat; (*b*) spirits distilled from the produce of and within the Union.

Animals living, except mules and geldings, and cattle and sheep for slaughter.

Bags for flour, grain, manure, produce, sugar, wool, coal, and minerals.

Bands and belting of all kinds for driving machinery, binding twine or harvest yarn.

Bones, feathers, ivory, hair, hoofs, horns, shells, skins, teeth, wool, and other parts of animals, birds, fishes, or reptiles, in their raw and unmanufactured state.

Bottles and jars of common glass or earthenware.

Boxes, empty, cardboard and wooden, put together or in pieces or shooks: for packing.

Carriages, carts, wagons and other wheeled vehicles.

Cork dust, paper shavings, sawdust, husks and other waste substances intended and suitable for use only as packing material.

Corks and bungs.

Guano and other substances, animal, mineral or vegetable, artificial or natural, suitable for use as fertilisers or manures.

Iron and steel: angle, bar, channel, hoop, rod, plate, sheet or T; plain, including perforated and galvanised: rough and unmanufactured; not including corrugated sheets.

Lead: bar, pipe, and sheet.

Machinery fitted to be driven by cattle, electric, gas, heat, hydraulic, pneumatic, steam, water or wind power, including spare parts.

Pipes, piping and tubes of earthenware or metal of all kinds, for drainage, sewerage, irrigation, water supply or pumping.

Seeds, bulbs, plants, and tubers for planting or sowing only, under such regulations as regards edible kinds as the Customs authorities may impose to safeguard the revenue against diversion into ordinary consumption.

Sheep dip, sheep dipping powders, materials suitable only for dip, and dipping tanks.

Sprayers and sprinklers and other apparatus for destroying pests or diseases in stock, plants or trees.

Staves.

Sulphur; substances for destroying pests or diseases in stock, plants or trees; and disinfectants.

Tobacco the produce of South Africa, imported overland.

Vaccine virus and toxin.

Vegetables, fresh or green, but not including potatoes or onions.

Water-boring apparatus.

Wine presses and wine pumps.

Wool, straw, hay, and forage presses.

Wire and wire-netting for fencing: gates, standards, strainers, and

other materials or fastenings of metal ordinarily used for agricultural or railway fencing.

Wire rope.

CLASS III.—GENERAL. *AD VALOREM* 7½ PER CENT.

All goods, wares or merchandise, not elsewhere charged with duty and not enumerated in the Free List, and not prohibited to be imported into the Union, are liable to a duty of 7½ per cent. *ad valorem.*

It will be seen that this tariff is extremely favourable to the farmer and agriculturist.

RAILWAYS.

The present Cape Colony system is divided into four sections, the Western, Northern, Midland and Eastern.

The gauge generally adopted is three feet six inches.

The WESTERN SECTION consists of a line from Cape Town to De Aar, 501 miles, with short branch lines to Malmesbury, Stellenbosch, Simon's Town, and Sir Lowry's Pass. It is connected with the Midland Section by a line from De Aar to Naauwpoort Junction, sixty-nine miles long.

Extensions of this section are: (1) a branch from Malmesbury to Morreesburg thirty miles long. Gauge three feet six inches; (2) a line, fifty-two miles long, from Sir Lowry's Pass to Caledon. Gauge three feet six inches; (3) *Sanctioned*, for immediate construction, a branch line from Kalabas Kraal to Hopefield, *viâ* Darling, forty-nine miles long. Gauge two feet.

The Central Railway, branching off at Worcester and running to Ashton, forty-two miles, and Swellendam, eighty-three miles, is a private venture. This railway is being extended to Riversdale, a further distance of sixty-five miles.

The NORTHERN SECTION proper runs from De Aar to Vryburg, 273 miles long, where it joins the Rhodesia Railway Company's lines, running through Mafeking and Palapye to Bulawayo, 586 miles, or 1,360 miles altogether from Cape Town.

The MIDLAND SECTION consists of a line from Port Elizabeth to Norval's Pont on the Orange River Colony frontier, 329 miles long, where it connects with the Orange River Colony Trunk line, running through Bloemfontein to the Transvaal.

The Midland connects with the Western Section by a line

from Naaupoort to De Aar, 69 miles long, and with the Eastern Section by a line from Rosmead Junction to Stormberg Junction, 83 miles long.

A loop-line, 276 miles long, runs from Port Elizabeth, viz. Zwaart Kops Junction, Graaff Reinet and Middelburg Town to Rosmead Junction. From this loop-line a branch from Klipplaat, 123 miles from Port Elizabeth, is being made *viâ* Willowmore to Oudtshoorn, a distance of 155 miles. This branch is to be extended from Oudtshoorn to Mossel Bay *viâ* George.

From Alicedale Junction a line, 35 miles long, runs to Grahamstown, where it connects with a private line, 43 miles long, known as the Kowie line, running from Grahamstown to Port Alfred. A small branch, 3 miles long, connects Colesberg with the main line. A branch is also being constructed, crossing the main line at Cookhouse and running from Somerset East to Fort Beaufort and King William's Town, distance from Somerset East to King, 154 miles. A light line, 179 miles long, gauge two feet, connecting Port Elizabeth with Humansdorp and Avontuur, is also to be built.

The Eastern Section runs from the Port of East London to Aliwal North, 280 miles, with a branch line to King William's Town, 10 miles, and is connected with the Orange River Colony Trunk line by a line 67 miles long from Albert Junction, 3 miles north of Burghersdorp, to Springfontein, and with the Midland Section by the line, 83 miles long, from Stormberg Junction to Rosmead Junction. From the bridge over the Orange River at Bethulie northwards, the line is now under the charge of the Civil Governments of Orange River Colony and Transvaal.

A branch line, 33 miles long, from Bowker's Park, near Queenstown, to Tarkastad, was opened in 1900. The line to King William's Town is being extended to Fort Beaufort *viâ* Cookhouse on the Midland Section, and thence to Somerset East, altogether 154 miles.

A line, 66 miles long, leaves the Eastern Section at Sterkstroom, passes near Dordrecht, and runs to the Indwe Coal Mines in the Stormberg Mountains. A continuation of this line has been surveyed *viâ* Maclear.

RAILWAY REGULATIONS.

Fares, with a few exceptions, are charged at the rate of 3*d.*, 2*d.*, and 1*d.*, per mile for first, second, and third class respectively. Fractions of a 1*d.* are levelled up to 1*d.* Reductions are made on tickets for most of the long-distance journeys.

Return tickets are charged at one and a half times the single fare.

Return tickets from stations north of De Aar or Colesberg to Cape Town are available from Port Elizabeth or East London on the homeward journey and *vice versâ*.

Children under three years old are free if accompanied by other passengers. Between three and twelve they travel half price.

Passengers holding single or return tickets (not excursion) for distances over twenty miles, may break their journey at intermediate stations.

Ordinary tickets are available for the following periods :—

SINGLE.	RETURN.	
Under 24 miles, 1 day.	4 days	Inclusive of Sundays, and of days of issue, and arrival.
24 miles to 100 miles, 4 days.	8 days	
101 miles to 250 miles, 7 days.	16 days	
251 miles to 400 miles, 9 days.	1 calendar month.	
Over 400 miles, 9 days.	3 calendar months.	

Luggage.—Each passenger is allowed to carry free with a first-class ticket, 100 lbs. ; second-class, 75 lbs. ; third-class, 50 lbs. Children over three and under twelve are allowed half this amount, and commercial travellers, 200 lbs. or 150 lbs. according to the class they travel, any excess being charged at half parcels rates.

In consulting railway time tables it must be borne in mind that on the whole Cape railway system (including the Bloemfontein-Pretoria Trunk Line), Cape mean time is kept, namely, $22\frac{1}{2}^{\circ}$, or one and a half hours east of Greenwich.

At mid-day, Cape Town, the true local time at the following places is —

Beaufort West, 12.17.
Vryburg, 12.25.
Port Elizabeth, 12.29.
Graaff Reinet, 12.25.
East London, 12.38.
Durban, 12.50.
Kimberley, 12.25.
Bloemfontein, 12.32.
Grahamstown, 12.32½.
King William's Town, 12.36.
Pretoria, 12.41.
Delagoa Bay, 12.57.

CONSTITUTION AND GOVERNMENT.

The Colony has a Constitution modelled on that of Great Britain. The Legislature consists of a Governor, an Upper House or Legislative Council of twenty-three members, and a Lower House or House of Assembly of eighty-two members elected every five years.

The qualifications for voters are the same for both Houses, and are now as regards new voters as follows:—Twelve months continuous occupation of a tenement of the value of £75, or the receipt for twelve months of not less than £50 wages (per annum), and ability to write their names, occupations and addresses. Members of the Upper House must be at least thirty years of age, and possess £2,000 in unmovable (real) property, or £4,000 in both movable and unmovable (personal and real) property.

The proportion of voters to total male population was 11·82 in 1891 (Census year).

The laws administered in Cape Colony are Roman-Dutch modified by Placaats and Acts of the Colonial Parliament, with the right under certain conditions of appeal to the Privy Council.

The Executive Government comprises six Ministers, members of either the Upper or Lower House of Legislature, who are responsible to Parliament, and administer the following Departments:—

The Treasury (The Treasurer).

The Colonial Office (The Colonial Secretary).

The Law Department (The Attorney-General).

The Public Works Department and Railways (The Commissioner of Public Works).

The Agricultural Department (The Secretary for Agriculture).

There is at present a Minister without portfolio.

AGRICULTURAL DEPARTMENT.

One of the most useful Departments of the Government is the Department of Agriculture, whose functions are, chiefly, to assist the farming population with expert advice upon all matters relating to their craft; to record and adapt to the country's requirements the known and successful methods of the farming communities of other countries; to be ready in

cases of public emergency or danger to meet a demand for the direction and services of Veterinary Surgeons, Fruit Experts, Viticulturists, Entomologists, Sheep Inspectors, Botanists and seedsmen: a staff of whom are attached to the Department. To advise as above verbally, by letter, or through the columns of its agricultural magazine on the best kinds of seed for growth in the various localities of the Eastern and Western Provinces, the best agricultural implements and machinery, the right breeds of horses for stud and general purposes; the best kinds of cattle and sheep, the most productive and payable fodders and cereals, and the surest methods of combating the diseases of animal and vegetable life; in short, a reference and advisory department that exercises all the functions necessary for the support and encouragement of the staple industry of the Colony. The "Agricultural Journal," the organ of the Department, circulates among the farmers, and, as its name implies, conveys to them a record of rural doings at home and references to the special experimental and practical accomplishments of their own and of other countries; the opinions of experts upon the current problems of South African farming matters, a few lively pages devoted to editorial comments, homely and scientific correspondence between the farmers and the experts of the Department, and general information, which long experience has taught the Department to be of the most practical use to the readers of the magazine. At the time of writing, the Journal, which had hitherto been issued fortnightly, had made its appearance as a more bulky monthly publication, a step in the right direction and in keeping with the custom of other Agricultural countries. As the introductory remarks accompanying the first number of the new issue say, a plethora of Journals, like a surfeit of any other good thing, is apt to make the publication cheap, besides keeping the editor confined closely to his office when he ought often to be among his constituents.

Every visitor to the Colony who requires information about farming matters should call at the office of or write to the Under Secretary of the Department of Agriculture, Cape Town.

A list of useful pamphlets which are published by the Department, and written by practical Cape farmers and Government experts, will be found in the appendix. Any of these can be obtained on application.

The "Agricultural Journal" is issued monthly and sent to any part of South Africa for an annual subscription of 5*s*.

Intending settlers desiring further information, should write to or call upon the Agent-General for Cape Colony, 100, Victoria Street, Westminster, London; the Under Secretary, Agricultural Department, Cape Town; or the Civil Commissioner in any of the Divisions described in this book, merely addressing him as, "The Civil Commissioner," &c.

CHAPTER III.

FRUIT-CULTURE AT THE CAPE.

For many years past the Cape has held a somewhat remarkable position. Towards two great points have tended almost all the local enterprise of South Africa, and instead of Cape Colony having solely to look after its own maintenance it has been the purveyor to an immense industrial population beyond its borders. The yellow harvests of the corn districts went northwards. Thither went the slaughter cattle in ever-multiplying troops. The fishermen on the coasts sent the major portions of their hauls up-country in ice. The smaller industries of the farms received a like impetus, and butter, poultry, eggs and fruit of every kind went to satisfy the daily demands of the Kimberley and Transvaal populations. The same thing will happen again, and will continue for some years notwithstanding the fact that many thousands of Boer farmers and producers will go back to their farms and that the new administrations are exercising a vigorous policy of agricultural development. So, in every direction there are openings for enterprise in various kinds of *petite culture*, openings such as have never existed here within the memory of man, because new gold and diamond fields and fresh industries of every kind are sure to be begun in the new Colonies, attracting a vast population in addition to that already in the country. It is not as if one had to speculate upon the chances of perishable produce being got across the line and placed upon the English market in saleable condition. But for everything that a man can grow to a moderate degree of perfection there is an unfailing market which is some forty or fifty hours distant from the coast, and the rail to expedite all the way. It is said to be well for a man to have two strings to his bow. The up-country market is to Cape

Raisin Making, Worcester.

growers the first string, the export trade in fruit is the other. All the special appliances required for both lines of the enterprise are already provided. The steamship companies supply cold storage on their vessels, and refrigerating chambers are available ashore for goods awaiting shipment. It would seem, therefore, that the only element required is an increase in the number of intelligent and practised growers. They are wanted from England and Australia, in fact from anywhere where the skill and experience required has run for years into everyday practice. This is the immigration wanted just now at the Cape to catch at the opportunity of the moment and to turn skilled fruit-growing into gold. No question that success awaits the man who knows how to deal with fruit trees, to break his ground up properly, to drain, to prune, to gather, to pack for market up-country, or for market in Covent Garden.

Then, it may be asked, Are there no growers at the Cape? Truly very few, and by no means sufficient to give a character to this magnificent country as a home of fruit-growing. There are some in the east and the west who are sufficient to lead by example the careless and lagging in their localities into better ways, but more of such men are wanted. The growth of fruit in the Cape was until recently always a by-thing, or what might be termed a toy pursuit of the landowner. The advent of a few men from other countries and the determination to do better on the part of some of the most enlightened farmers of the Cape during the last few years have made things a little better now. These few men grow fruit to the perfection possible in this perfect climate, and all they send to market is eagerly bought up either for local consumption among the higher classes or for export to England. At one time there were, everywhere, antiquated conservative ways of growing everything at the Cape, arising out of the comparative isolation in which the farmers lived; ways that have been broken in upon by the establishment of Fruit-Growers Associations in their very midst, through which an effective interchange of ideas has been brought about and information given upon the subject of their special industry. Till these excellent associations sprang up, mainly through individual activity and personal influence, it was difficult to find a market gardener who took in a garden periodical or cared to learn what was done in other countries.

An Invitation to Fruit-Growers.

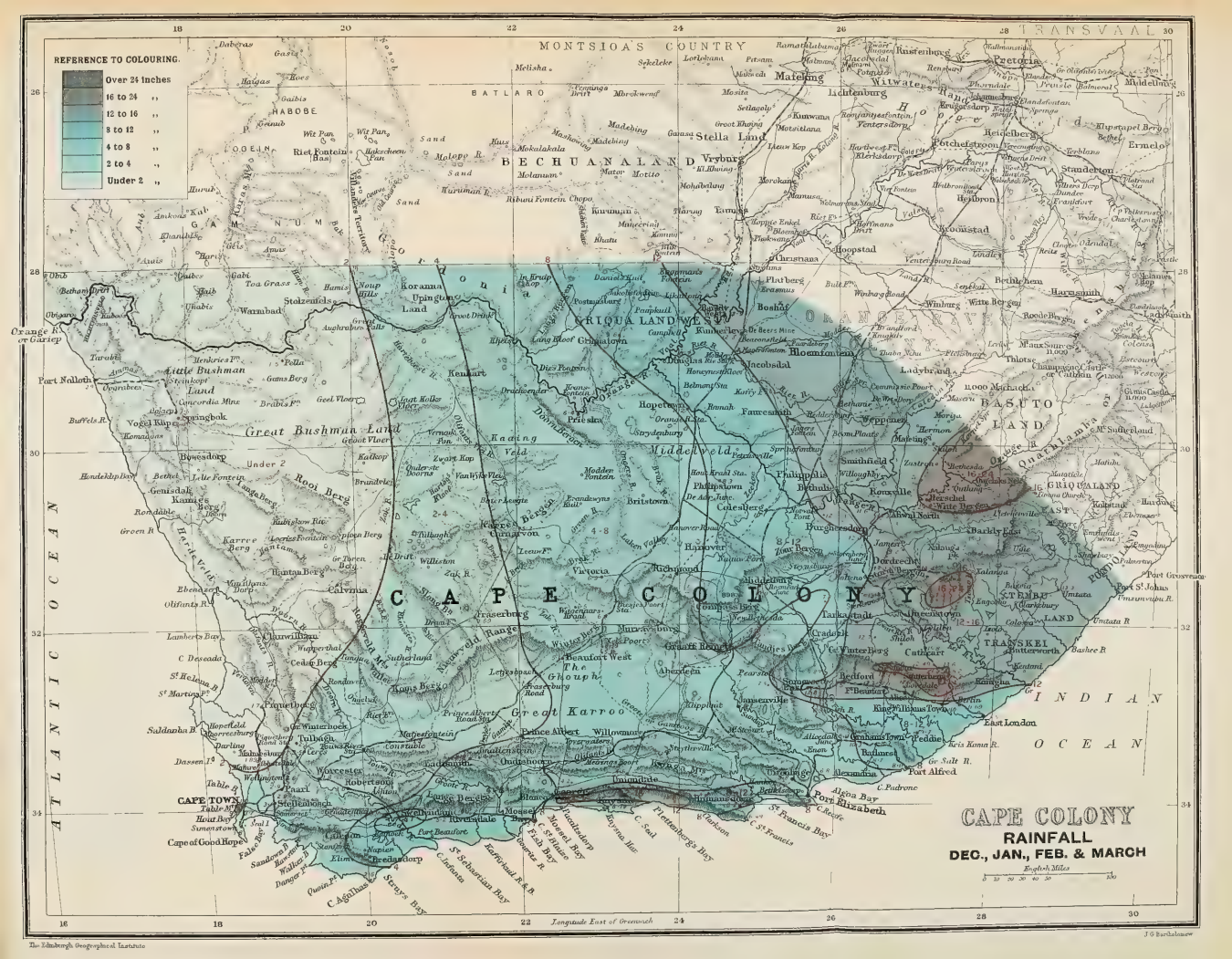
The English—and over-sea Colonial—fruit-grower who now despairs of making profits at home, is invited to come to the Cape and take his opportunity by the forelock. It is a pity that the foreign capital which comes Capewards goes mostly into mining stock. It were well if some of it were invested in the healthier industry of fruit-culture. Perhaps ere long the one or two companies which have already got into working order will form an example to other companies and friendly competitors in a trade which is practically illimitable.

We have said that all the material appliances for a growing export fruit trade have been initiated here. Let it be remembered that the Cape has the signal advantage for fruit supply to European markets which is not conceded to the clever and enterprising American grower. *The fruit seasons at the Cape fall conversely with those of England.* Consequently the only competitors in our special line and special time of exporting will be the Australians, who, however, are heavily handicapped by a one-third greater distance from England. The best way of making the comparison with the northern hemisphere quite clear will be the following tabular arrangement :—

CAPE.		EUROPE.
December		June.
January	Summer.	July.
February		August.
March		September.
April	Autumn.	October.
May		November.
June		December.
July	Winter.	January.
August		February.
September		March.
October	Spring.	April.
November		May.

This general arrangement must not be taken too absolutely. The seasons on the two sides of the Colony, west and east, are differentiated much as are those of India, by the rainfall occurring conversely. In fact the Cape is a monsoon country,

REFERENCE TO COLOURING
Over 40 inches
30 to 40 ,,
20 to 30 ,,
10 to 20 ,,
5 to 10 ,,
Under 5 ,,
CAPE COLONY
ANNUAL RAINFALL
Rainfall Stations are shown by red dots
CAPE COLONY
BECHUANALAND
BASUTO LAND
GRIQUALAND WEST
GRIQUALAND EAST
ORANGE FREE STATE
TRANSVAAL
NATAL
TRANSKEI
Great Karroo
Great Bushman Land
Little Bushman Land
Middelveld
Roggeveld
Hantam
Hardeveld
Nieuweveld Range
The Groupt
Cape Town
Table Mt.
Cape of Good Hope
Port Elizabeth
East London
Port Alfred
Algoa Bay
St Francis Bay
Plettenberg's Bay
Mossel Bay
Knysna
Simon's Bay
False Bay
Table Bay
Saldanha Bay
St Helena B.
Langebaan B.
Hondeklip Bay
Port Nolloth
Orange R.
Vogelvlei
Springbok
Kenhart
Griquatown
Campbell
Douglas
Hopetown
Prieska
Carnarvon
Victoria
Richmond
Britstown
Colesberg
Philippolis
Bethulie
Rouxville
Smithfield
Wepener
Ladybrand
Bloemfontein
Boshof
Christiana
Hoopstad
Kimberley
Beaconsfield
Barkly West
Jacobsdal
Thaba Nchu
Winburg
Bethlehem
Harrismith
Senekal
Ficksburg
Ladybrand
Wepener
Aliwal North
Burghersdorp
Cradock
Graaff Reinet
Middelburg
Cookhouse
Somerset East
Cradock
Tarkastad
Queenstown
Cathcart
Butterworth
Kentani
Umtata
Port St Johns
Port Grosvenor
Kokstad
Matatiele
Mount Frere
Maseru
Morija
Thaba Bosigo
Leribe
Mafeking
Lichtenburg
Witwatersrand
Pretoria
Heidelberg
Potchefstroom
Klerksdorp
Vryburg
Stella
Taungs
Mafeking
Zeerust
Rustenburg
Middelburg
Belfast
Lydenburg
Barberton
Pietersburg
Waterberg
Zoutpansberg
Soutpansberg
Limpopo R.
Orange R.
Vaal R.
Modder R.
Riet R.
Caledon R.
Great Fish R.
Great Kei R.
Umtata R.
Bushee R.
Kowie R.
Keiskama R.
Buffalo R.
Tugela R.
Umzimvubu R.
Kaap R.
Komati R.
Crocodile R.
Limpopo R.
Olifants R.
Berg R.
Breede R.
Gouritz R.
Gamtoos R.
Sundays R.
Zwartkops R.
Swartkops R.
Kowie R.
Great Fish R.
Great Kei R.
Umtata


REFERENCE TO COLOURING.
Over 24 inches
16 to 24 ,,
12 to 16 ,,
8 to 12 ,,
4 to 8 ,,
2 to 4 ,,
Under 2 ,,
CAPE COLONY
RAINFALL
DEC., JAN., FEB. & MARCH
English Miles
Longitude East of Greenwich
ATLANTIC OCEAN
INDIAN OCEAN
MONTSIOA'S COUNTRY
BECHUANALAND
BATLARO
HABOBE
GAMNUM
TRANSVAAL
ORANGE RIVER COLONY
BASUTO LAND
GRIQUALAND EAST
TRANSKEI
Great Bushman Land
Little Bushman Land
Great Karroo
Middle Veld
Roggeveld Range
Nieuwveld Range
Hantam Berg
Roggeveld Berg
Roode Berg
Witte Berg
Swart Berg
Zwart Berg
Cold Berg
Cedar Berg
Winterhoek
Sneeuw Berg
Compass Berg
Stormberg
Drakensberg
Witteberg
Kamies Berg
Langeberg
Outeniqua Berg
Zuurberg
Suurberg
Kaga Berg
Kouga Berg
Baviaans Kloof
Great Fish R.
Great Kei R.
Bashee R.
Umtata R.
Umzimvubu R.
St. Johns R.
Kowie R.
Sundays R.
Gamtoos R.
Olifants R.
Breede R.
Berg R.
Doorn R.
Hex R.
Zak R.
Fraserburg
Victoria
Richmond
Hanover
Graaff Reinet
Aberdeen
Beaufort West
Prince Albert
Willowmore
Cradock
Middelburg
Colesberg
Hopetown
Britstown
Prieska
Carnarvon
Williston
Calvinia
Clanwilliam
Piquetberg
Malmesbury
Tulbagh
Worcester
Robertson
Caledon
Swellendam
Riversdale
Mossel Bay
George
Knysna
Plettenberg's Bay
Algoa Bay
Port Elizabeth
Port Alfred
East London
Kingwilliamstown
Queenstown
Cathcart
Komgha
Butterworth
Umtata
Kokstad
Matatiele
Mount Frere
Mount Fletcher
Maclear
Barkly East
Aliwal North
Smithfield
Rouxville
Wepener
Ladybrand
Thaba Nchu
Bloemfontein
Boshof
Hopetown
Kimberley
Griquatown
Douglas
Taungs
Vryburg
Stella
Mafeking
Lichtenburg
Wolmaransstad
Potchefstroom
Klerksdorp
Heidelberg
Pretoria
Middelburg
Ermelo
Standerton
Harrismith
Ladysmith
Newcastle
Utrecht
Vryheid
Wakkerstroom
Piet Retief
Volksrust
Amersfoort
Bethel
Bethlehem
Winburg
Senekal
Kroonstad
Heilbron
Frankfort
Vredefort
Parys
Vereeniging
Johannesburg
Krugersdorp
Rustenburg
Zeerust
Lichtenburg
Delareyville
Ventersdorp
Potchefstroom
Fochville
Boksburg
Benoni
Springs
Nigel
Heidelberg
Bethel
Ermelo
Carolina
Barberton
Pilgrim's Rest
Lydenburg
Middelburg
Belfast
Machadodorp
Waterval Boven
Nelspruit
Komatipoort
Pietersburg
Potgietersrust
Warmbad
Stolzenfels
Upington
Koranna Land
Griqua Land West
Kenhart
Vryburg
Mafeking
Zeerust
Rustenburg
Pretoria
Middelburg
Witbank
Ermelo
Carolina
Barberton
Pilgrim's Rest
Lyden

REFERENCE TO COLOURING.
Over 24 Inches
16 to 24 ,,
12 to 16 ,,
8 to 12 ,,
4 to 8 ,,
2 to 4 ,,
Under 2 ,,
CAPE COLONY
RAINFALL
MAY, JUNE, JULY & AUGUST.
English Miles
Longitude East of Greenwich
ATLANTIC OCEAN
INDIAN OCEAN
MONTSIOA'S COUNTRY
BECHUANALAND
GRIQUALAND WEST
BASUTO LAND
TRANSVAAL
ORANGE RIVER COLONY
Great Bushman Land
Great Karroo
Middelveld
Roggeveld Mts.
Nieuweveld Range
Sneeuwberg
Cedarberg
Hantam Berg
Roode Berg
Langeberg
Zwarte Berg
Witteberg
Stormberg
Drakensberg
Maluti Mts.
Quathlamba
Table Mt.
Devil's Peak
Lion's Head
Signal Hill
Robben I.
Green Point
Sea Point
Camps Bay
Hout Bay
Simon's Bay
Cape of Good Hope
Cape Point
False Bay
Table Bay
Saldanha Bay
St Helena B.
St Martin's B.
Lamberts Bay
C. Columbine
C. Deseado
C. Agulhas
Struys Bay
Danger Pt.
Walker Bay
Hangklip
Kleinmond
Hermanus
Caledon
Bredasdorp
Napier
Swellendam
Riversdale
Heidelberg
Mossel Bay
Plettenberg's Bay
Knysna
Wilderness
Sedgefield
George
Uniondale
Avontuur
Prince Albert
Willowmore
Aberdeen
Graaff Reinet
Beaufort West
Murraysburg
Richmond
Victoria
Hanover
Colesberg
Philippolis
Bethulie
Hopetown
Douglas
Prieska
Kenhart
Kuruman
Mashowing
Mokalakala
Molopo R.
Vryburg
Stella
Taungs
Mafeking
Lichtenburg
Zeerust
Rustenburg
Pretoria
Middelburg
Witwatersrand
Johannesburg
Heidelberg
Potchefstroom
Klerksdorp
Wolmaransstad
Ventersdorp
Krugersdorp
Standerton
Ermelo
Wakkerstroom
Volksrust
Newcastle
Dundee
Glencoe
Ladysmith
Harrismith
Bethlehem
Winburg
Boshof
Hoopstad
Kimberley
Beaconsfield
Barkly West
Griquastad
Campbell
Griquatown
Prieska
Upington
Kenhart
Kakamas
Keimoes
Orange R. or Gariep
Port Nolloth
Little Bushman Land
Steinkopf
Concordia Mine
Okiep
Springbok
Buffels R.
Vogel River
Komaggas
Port Nolloth
Hondeklip Bay
Garies
Kamies Berg
Calvinia
Carnarvon
Williston
Fraserburg
Sutherland
Loeriesfontein
Clanwilliam
Wupperthal
Cedarberg
Piquetberg
Hopefield
Saldanha
Malmesbury
Darling
Tulbagh
Worcester
Robertson
Montagu
Ashton
Bonnievale
Ceres
Tanqua Karroo
Prince Albert Road
Matjesfontein
Laingsburg
Fraserburg Road
Leeuw Kop
Kuruman R.
Rubana Fontein
Chopo
Molopo R.
Mokalakala
Madebing
Gamas
Mashowing
Mokaning
Mamusa
Taungs
Vryburg
Lichtenburg
Mafeking
Setlagoly
Mosita
Molopo R.
Sand
Kuruman R.
Rubana Fontein
Chopo
Mamusa

the west having its maximum rainfall in winter, while the east has it in the warmer months. There is this peculiarity also in the east, that there are two maxima, namely : the November or spring rains, and the autumn rains in February. Nothing can show this peculiarity of west and east better than the two diagrams given under the heading of viticulture, which show the rainfall curve for the year at Cape Town, and Grahamstown in the Eastern Province, respectively.

From these peculiarities arise important results in fruit-growing. The most striking is the limitation of uniformly profitable wine, grape, and raisin production to the Western Province, which possesses the necessary hot and dry summers for the proper ripening of the fruit of the vine.

January.—In western markets January gives the last of the strawberries and apricots which have been to hand for some five or six weeks previously. The earlier sorts of grapes, pears, and apples according to kind, also the earlier peaches, plums, and figs, fill up the list. From the conditions of the climate it is rather a cultural mistake to try and hurry things by planting what are known in Europe as early-fruit sorts. Cape conditions are much more favourable to perfection in the later kinds, at least in such parts of the country as lie upon the first plateau reaching inland all round the coast. Further up-country on the narrow second and the immense third plateau, which reaches a level of approximately 4,000 to 5,000 feet, the conditions are considerably altered. But the gain expected from the growth of early sorts at this level is practically interfered with by the tardier approach of spring and persistence of a dry winter's cold. The results of the most experienced cultivators is decidedly against experimenting with early sorts in the hope of catching the high prices asked in an early market.

February.—In February, the better sorts of apples, peaches, and nectarines come forward ; and a glance at these will show conclusively that they are mainly *late* European varieties, and accentuate the caution that has been given against early sorts, at least for market supply on the large scale. Grapes and melons are becoming plentiful, and begin to acquire their proper distinctive flavour, unless they have been spoiled by injudicious irrigation. The fruits of keeping quality are now approaching the season for picking. They are often left too long upon the

tree through lack of two things: first, want of practical knowledge of the precise degree of growth at which to take them, so that they shall best develop the richness and flavour that come by keeping; and second, want of a reasonable fruit-store, where they can be laid out properly, inspected daily, and kept at an even temperature.

February—March.—In February and March begins the first drying season, that is to say, fruit-drying in the sun, as opposed to fruit-evaporating, the more practical, more cleanly, manageable, and time-saving plan. Already good work of this kind has been done, and the Wellington dried fruits have quite fetched up to the already high standard of the raisins produced in the Worcester district. The output of dried fruit is not a hundredth part of what it should be, and what could readily be absorbed by the Cape consumer. The finest country in the world for production is served by manufacturers and dealers away on the other side of the world. How long this anomaly is to continue, and a Cape rural population is to think it no shame to have on their tables American dried apples and peaches, rests with the coming race of fruit-growers whom it is hoped to attract to the country. With present conditions at the Cape, with family grocers buying up all the raisins that a whole district produces, with farmers content with a dried fig crop which a man could carry on his shoulder, there must be a good many very fair fortunes lying about loose at the Cape, and only waiting for men with moderate commercial instincts, industry, and business capacity, to come over and appropriate them to themselves.

March.—March, of all the months of the year, shows the barest fruit market, at least in the way of fresh kinds putting in an appearance then. The supplies are chiefly late apples and pears of the keeping sorts. Peaches of late kinds come in and generally secure good prices. In all these fruits the variety of sorts presented on the market is very limited, and the knowledge of named kinds is generally absent. It is impossible to go to any retail dealer and ask for a *Bon Chrêtien* pear, or *Ribstone Pippin* apple. The seller would simply gaze in astonishment as if he were being spoken to in a foreign language.

April, May, June.—April, May, and June present few novelties. The guavas of many seedling kinds fill up a place which is hardly warranted by the intrinsic value of the fruit as

at present grown. They are there from the insignificant bulk of a gooseberry to that of middle-sized apples. But very little attention has been given to culture, and still less to improvement of sorts. It may be said that the guava, as grown at the Cape, is often practically a wildling, and it would be well if nineteen out of twenty of them were destroyed, and selected grafted plants put in to take their place. Walnuts and chestnuts now make their appearance. The remainder of the supply of these months is from Natal, whence our market is usually flooded with small pineapples and bananas. A great many of the former are, however, now grown along the eastern coast of the Cape, and there can be little doubt that this industry will increase year by year to very considerable dimensions. The growers began the proper way, namely, by discarding the small, hard-skinned, and half-grown wildling pine that has so long been foisted upon us, and going to Ceylon and the West Indies for the very best sorts procurable. From this source, too, are obtained large supplies of Cape gooseberry (*Physalis*), which is perhaps the most delicious fruit for canning and preserves that the whole world has to show. We have been accustomed to despise it, simply because it grew wild without care or culture. The jam factories are, however, increasing their output of it, and making it worth while for people to undertake its production as a *petite culture*.

June and July.—With the last days of June and the first of July come in the whole tribe of citrus fruits, orange, lemon, naartje or tangerine, and pamplemousse. From the variations of climate and altitude which have been signalised at the beginning of this chapter, it follows that these fruits hold their place on the market continuously till December, their peculiar external character and power of ripening up after gathering rendering them comparatively easy of transport for long distances. The locally grown fruit is perhaps at its best in October—that is to say, it can then be picked and marketed perfectly ripe, instead of gathering it green and trusting it to slow ripening in the store-room. Perhaps in the case of no fruit more than these has the public mind been so thoroughly awakened to the necessity of improvement, and discarding the wretched seedling rubbish, full of pips and cased in the thickest of skins, which has for many years encumbered our markets. The importations of good grafted trees of the best sorts have been very numerous;

and the cultural conscience has been aroused to the necessity of a vigorous crusade against the scale insects, which up till a recent date, had it all their own way.

October.—October brings with it the Japanese loquat, another fruit which calls for selective improvement. There is as yet far too much pip and too little flesh upon the ordinary loquat. Yet there have arisen in several private gardens seminal varieties showing a commencement of better things.

November.—With November come in the earlier figs and the strawberry. There is a future for the fig, and its selected Cape home and centre of drying for commercial purposes will probably be somewhere in the Karroo. There are not, however, in the Cape any native insects similar to the *Blastophaga*, which assists in the perfecting of the celebrated Smyrna fig. As to strawberries, the selection of sorts, grown chiefly at Stellenbosch, is very limited, and modes of culture anything but modern. As a rule, the beds are allowed to continue production for far too many seasons, and the fruit consequently deteriorates, losing both size and succulence. New blood and new ideas, with the habit of modern practice in strawberry-growing, as it is done in Kent and Surrey for the great London markets, is very much wanted at the Cape. The demand for the fruit is practically unlimited. The month closes with the early apricots, and this delicious fruit queens it right through December.

Whoever reads these pages and begins to turn over in his mind the idea of coming out to the Cape to utilise there his practical knowledge of European fruit-growing, will naturally ask what conveniences already exist in the way of supply of orchard stock. Every practical man would hesitate to bring out with him a lot of grafted trees, selected as best he could, for a country he had not even seen, and of whose climate and soil he had had no experience. But recently there have been introduced into the Colony large numbers of the very best modern fruit sorts of all kinds, by men who have themselves practically learned the capacity and conditions of the Cape as a fruit-growing country, and it is not too much to say that, by their industrious multiplication of these picked kinds, the market for first-class orchard stuff is now amply supplied. There is no reason now for continuing the old system of seedlings, unless out of pure wrong-headedness and refusal to take up with improved methods.

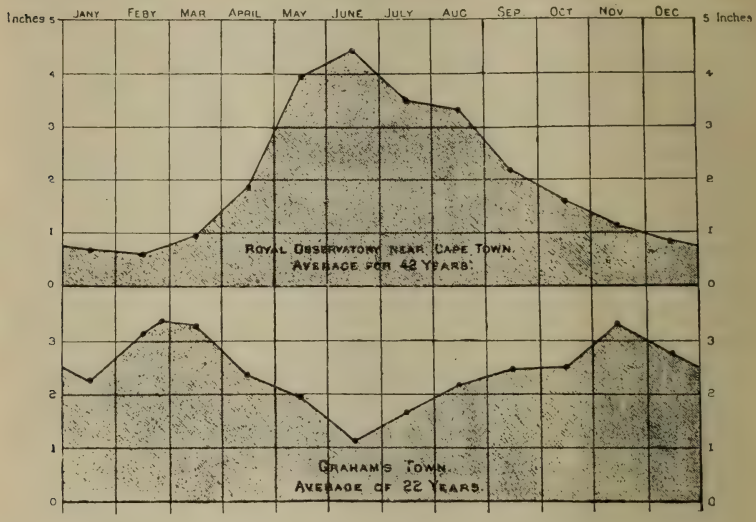
So friendly is the Cape climate to the skilled manipulations of the nurseryman, that first-class grafted yearlings can be obtained at prices not greater than those ruling in England, and thoroughly reliable to name and graft-stock. To import for oneself on coming out to the Cape would certainly involve the loss of a season, to say nothing of difficulties in the way of immediately finding ground wherein to set out the consignment. Immigrants of the kind one would so gladly see spreading themselves over the best districts of the Colony, each with his market-orchard grown and tended in the way that means business and sound profits, would be wise not to start at once, but to spy out the country first for themselves, and for themselves see what the Cape grapes of Eschol are like, take stock of the Capers and their old-fashioned ways and conservative habits of working, and then only, when the land was no longer strange, and the altered climatic conditions had become familiar, to exploit their capital on some selected fertile piece of land, and add to the wealth of their adopted country by successfully adding to their own.

VITICULTURE.

The principal wine-growing centres are in the Western Province. In the East, with its disposition to summer showers and frequent hailstorms, with much heavy rain in February, viticulture is reduced to a branch of gardening, and it is questionable if anything more than table grapes for local consumption, such as the *Crystal* and *Sweetwater*, can be successfully managed. Of course this is a general statement, subject to here and there an exception dependent upon climatic conditions.

For example, good results have been obtained in the somewhat intermediate climate of the Karroo, particularly at Graaff Reinet and its neighbourhood. The total rainfall throughout the Karroo averages low, say fourteen to eighteen inches, as compared with that in the normal eastern region. But the rule holds good in a general way, and a glance at Gamble's diagrams of rainfall, where the curve is plotted for a large number of places so as to be readily comparable by the eye, will enable one to determine whether viticulture on a large scale is climatically favoured, and where it will present special difficulties. In the former case the rain curve for January, February, and March—the ripening and

vintage months—keeps at or below one inch; in the latter it runs up to the monthly maximum for the year. The Sundays



River Valley upwards from the Addo, and also, perhaps, the hot sheltered environs of Uitenhage, are the best examples of local eastern exceptions to the general rule. But even here grapes have to be tended with very much greater care and intelligence than seems to be necessary west-away. The great difficulty to be grappled with is the general prevalence of anthracnose, or *black-spot* as it is sometimes called (*Sphaceloma ampelinum*, De By). This plague is an enemy to be reckoned with, and it is necessary that all eastern vineyards should be assiduously treated by spraying with Bordeaux mixture as a preventive of the scourge. There is little doubt that success will attend the proper application of this remedy just as has been proved to be the case in Europe. But the additional charges for skilled labour in its use are a heavy handicap, especially if there should be incautiously cultivated the more delicate varieties of vine, say, for instance, the Cape Western Hanepoot, known elsewhere as *Muscat of Alexandria*, a sort which is particularly liable to the attacks of anthracnose.

The Groot Constantia Government Wine Farm is situated about half-an-hour from Wynberg Railway Station, a suburb of

FARMHOUSE, GROOT CONSTANTIA WINE FARM.

Cape Town. The area of the farm is about 300 acres, a small portion of which is kept under cultivation for general produce. Although economically managed, it is, nevertheless, a show place of the best and most approved systems of management, not only in the vineyard but in the cellars. For many years the place was managed by the late Mr. J. P. De Waal, who recently died when on a visit to America, shortly after leaving Constantia. His masterly treatise which follows these notes is a sufficient indication of what may be expected under his *régime* at Groot Constantia. In every respect the paper might well be accepted as the Cape viticulturist's *vade mecum*.

Previous to leaving Cape Colony for a tour of the principal vineyards of the world, Mr. De Waal arranged with the Agricultural Department to supply regular reports of his researches, and he carried out this arrangement up to the time of his decease. He did not see on his travels any reason to alter any of the methods prescribed in his treatise; but, on the other hand, he found that the practices at Constantia were well up to the best modern ideas. When at Bordeaux he found the vintage in full swing, and he reported that the millions upon millions of vines on the Medoc were trellised, one, two, and three wires being used, and it was interesting to note that the two-wire system, as adopted at Constantia, was most approved of. Also he noted that the "White Green grape" is identical with the "Semillon grape," more than 50 per cent. of which enters into the composition of the world-famed Château Yquem wine, which has been described as a ray of sunshine concentrated in a glass. His last report came from Rutherglen in Australia, the largest wine-making centre of Victoria, where again he found the vintage in full swing. He said that he had good facilities for studying the methods of wine-making in Australia, and felt competent to offer a reliable opinion as to the reasons why the quality of Australian wine is superior to that of the Cape, viz.:—

1. The adoption of central wineries.
2. Systematic fermentation.
3. Grape varieties used for wine-making.

Mr. De Waal pointed out that there were fifteen to twenty central wineries in South Australia, which handled the bulk of the wine grapes grown in that Colony. These wineries are run

by large *vignerons*, who also buy up as much as they can from small growers within a radius of about six miles and sometimes more. Representatives of the wineries meet every year before the vintage, and, in order to prevent cut-throat competition, fix the prices to be paid to growers for different varieties of grapes. These prices vary according to the season and wine market. The following were the prices agreed upon for the year 1902, per ton of 2,240 lbs.:—Cabernet Sauvignon, £6; Malbec, £5 10*s.*; Shiraz, £4 10*s.*; Riesling, £3 15*s.*; Mataro, £3; Pedro Ximenes, £3; Frontignac, £3 10*s.*; Sweetwater (Cape white French), £2 10*s.*; mixed black, £2; mixed white, £2; Sherry, £3; Tokay, £3. Sellers have to deliver the grapes at the wineries.

Intimately connected with the system of central wineries is the systematic fermentation that contributes so largely to the general success of Australian wines. At all the places that Mr. De Waal visited the fermentation was conducted in open tanks made of bricks and cement, with a depth of not over five feet, and a capacity of 1,000 to 2,000 gallons, and, in every case, coolers for controlling the fermentation temperature were in use. In some cases great expense had been incurred in well-sinking to provide the cold water required. The result, said Mr. De Waal, is that the Australian wines are well fermented, and are thus subject to no danger from after-fermentation, as is often the case at the Cape.

The grape varieties used for wine-making in Australia had also a good deal to do with the difference in quality between the general run of Australian and Cape wines. But he desired this remark to refer only to the dry red wines, as he thought that the Cape had already all the best varieties of white-wine grapes. He pointed out that the chief red-wine grape at the Cape is Hermitage, and so it is in Australia, but the Cape Hermitage is a totally different grape to the Red Hermitage or Shiraz of Australia. The Cape Hermitage grape is known in Australia by the name of Ulliade or Oeillade, is considered rather watery for a wine grape, and is used more for the table. Mr. De Waal wrote strongly advising that no more Hermitage vines be planted at Constantia, but recommended Cabernet Sauvignon and Malbec instead. Further inland, where the climate is drier —at Wellington and Worcester, for instance—the Hermitage

will, no doubt, continue to be in favour for the production of light wine.

Mr. De Waal's recommendation that the Cape Government should send to South Australia for a quantity of vine cuttings, was at once acted upon.

IMPORT REGULATIONS.

With the object of checking the introduction of noxious insects and plant diseases, all imports of living plants, fruits, tubers, &c., whether arriving as ordinary cargo, passengers' luggage, or by post, are inspected at the port of entry by officers appointed by the Department of Agriculture. The importation of coffee plants is entirely prohibited; the importation of grape vines is restricted to the Government; and the importation of peach, plum, and all other stone-fruit trees is forbidden from the United States of America and the Dominion of Canada. Stone-fruit trees from all other places are also excluded, unless they are accompanied by a sworn declaration from the consignor that they were not grown in the countries named. There is a probability that Eucalyptus plants will soon be refused admittance, except as seed; but at present the limitations noted are the only ones in force. Other than in the case of stone-fruit trees, no certificate of any form is required; and the ordinary inspection is carried out regardless of all certificates that may be presented.

Should articles inspected be found free of insects and disease, they are passed without expense to the consignee; should they, however, be infested, they are cleansed at his expense, or, if considered advisable by the examining officer, they are confiscated and destroyed. No compensation is granted for articles destroyed, but in practice, such drastic treatment is reserved for articles infested by pests considered especially dangerous, or those that cannot be wholly eradicated by the ordinary methods of disinfection. The infestation of any one article renders all articles of that particular kind in the consignment liable to the treatment prescribed by the examining officer; and the infestation of any one article renders all articles in the same case similarly liable irrespective of kind. The regulations apply to cuttings, and any and all parts of a plant, that may be used for

propagating, equally with the whole plant. Infringement of the regulations makes the guilty party liable to severe punishment, and the attempted introduction of any prohibited article ranks as an offence.

South Africa is fortunately free of many of the worst fruit pests of Europe, America, and Australia. For this reason horticulturists are advised to procure the trees they require for planting from nurseries within the Colony. Well-grown stock of practically all desirable varieties, true to name, may be obtained locally.

Grape Gathering, Constantia, with a Flank of Table Mountain in the Background.

CHAPTER IV.

THE PROPAGATION AND CULTIVATION OF THE VINE.

By the late J. P. DE WAAL.

Limits and Soils for Viticulture.

THERE is probably no other plant in cultivation that will thrive in such a variety of soils and situations as the vine. It will grow amongst rocks, stones, and gravel, in stiff soapy clays and almost pure sand, on high hills and in low valleys; in fact almost anywhere where it gets sufficient moisture in the soil and shelter from the wind in a region with climatic conditions favourable to its development.

Although it is assumed that with proper attention the vine will thrive well over the greater part of South Africa, owing to climatic conditions, its commercial cultivation is practically confined to the Western Province of Cape Colony, which is the only part of South Africa that gets its rainfall during the winter months of the year, when the vine is leafless and at rest. The other parts of South Africa get their rains in the summer, when the grapes have to come to maturity, and when a continuation of wet weather may spoil the grape crop completely. The area for the production of wine is limited, and confined to the south-west corner of Cape Colony, principally to the divisions of the Cape, Malmesbury, Stellenbosch, Paarl, Tulbagh, Worcester, Robertson, Caledon, Prince Albert, Ladismith, and Oudtshoorn. The area under vines in these divisions is estimated to be about 18,000 acres.

The soil in which the vine flourishes best is a deep loose, friable loam, on a gentle slope that allows of good drainage. The term *loam* comprises a soil composed of clay, sand, and a fair proportion of vegetable matter. Soils answering to this description are such as are generally met with in valleys traversed by rivers.

Preparation of Soil.

The soil can either be ploughed or trenched by hand, according to its physical nature and other circumstances. Old forest land full of stumps, land with seams or patches of rock and gravel, very stony land and hard clayey unirrigable land require to be trenched to a depth of from two to three feet; deep loose and open soils, from which the bush has been cleared, can be broken up by ploughing. The depth of the ploughing will vary from eight to fifteen inches according to the nature of the land, more especially of the subsoil. Combined ploughing and subsoiling, with a suitable subsoil plough, can in some cases take the place of trenching.

The cost of trenching varies considerably under different circumstances, but the average cost can be taken to be from £5 to £6 per acre. The cost of ploughing and harrowing, including the clearing of the land, will vary from £1 10*s.* to £2 10*s.* per acre.

Establishing a Vineyard.

A vineyard, to consist of engrafted European vines, can be established either from plain or rooted cuttings. The rule before the advent of the phylloxera was to plant plain cuttings, also called blind canes. The planting of plain cuttings can be safely adopted in cases where the conditions for success are present. In the Western Province the conditions for success in regard to the soil are that the land must be properly prepared and in a fit condition for the planting of the cuttings by the beginning of August, and that the cuttings must be planted before the end of that month or early enough to catch the late winter rains, which will settle them firmly in the ground and supply the land with sufficient moisture to keep them alive until root formation commences. If the land is not ready in good time for ploughing, it is better to let it lie fallow, or put it under other crops, for a season, and to plant the cuttings out in a nursery from whence they can be transplanted, as rooted cuttings, in good time the following winter. Practically no time will be lost in that case, as such rooted cuttings usually make an excellent growth from the very start. One advantage in planting blind canes is that the work can be done in a quarter of the time that it takes to

plant rooted cuttings. When planting plain cuttings, it is always advisable to plant out a small quantity—from 5 to 10 per cent. of the amount planted in the field—of the same cuttings in a nursery so as to be in a position to fill in any gaps that may occur in the vineyard with rooted cuttings during the following planting season. It is a well-known fact that, as a general rule, plain cuttings will not succeed in gaps formed in a vineyard, even although such gaps are filled in during the season following that in which the vineyard was laid out.

Collection and Preservation of Plain Cuttings.—The cuttings should be gathered as soon as possible after the mother vines have been pruned. When gathering cuttings, those suitable for planting in regard to quality, thickness and length should at once be selected. This is preferable to picking up all prunings indiscriminately and selecting cuttings for planting afterwards from the heaps gathered together; it saves time and labour, and the buds of the cuttings suffer less damage. Further handling of the cuttings will be simplified if the thick ends are kept on one side of the bundles when they are gathered. A sharp look-out should be kept for cuttings with a heel of old wood, as they make the best root system. After being collected, the cuttings are carried out of the vineyard, trimmed and tied in bundles of 100 each. Tar rope or junk forms a strong and cheap tying material, but several kinds of rushes are also used for this purpose. The bundles of cuttings are then packed together in a hole or trench up to the level of the surface. Some covering material—sacking, straw or rushes—is put on the top of the cuttings and about half a foot of soil on the top of that, so that the cuttings are completely buried and preserved from being dried out by sun, wind and air.

The holes or trenches can be four or five feet deep, and should be made on a site where there is no danger of their being filled with drainage or storm water. When several varieties of cuttings are dealt with, it is advisable, with a view to prevent mixing, to have separate holes for each sort, and to place a board at the head of each hole stating the quantity and variety of cuttings buried in it.

Cuttings preserved in this manner will keep in good condition for three or four months, but will start budding in the beginning

of spring, when the temperature rises, before which time they ought to be planted out.

Planting of Plain Cuttings.—The cuttings should be about eighteen inches long and planted to a depth of from ten to fifteen inches, average depth twelve inches, deeper in loose, dry land and under a foot in damp, stiff valley soil. If planted to insufficient depth in open, dry, unirrigable land, the cuttings will suffer and may die off from the effects of drought; and if planted too deep in stiff, clayey and moist soil, the foot of the cutting will die off and the decay may be communicated upwards and cause its loss. On steep hillsides where the soil may wash away, cuttings should be planted to the maximum depth.

Cuttings are planted in the field either with a spade or planting rod, but more generally with the spade.

When planting with the spade, a clean vertical cut is made in the ground and the cutting inserted up to the required depth; the cut is then closed by first pressing the spade (with its back towards the cutting) full length into the ground at an oblique angle to the cut, about four inches away from it, and then pressing it forcibly backwards. In this manner the cut in which the cane was inserted gets solidly closed and the soil firmly packed round the foot of the cane, which is essential for a successful root formation.

Planting of Rooted Cuttings.—Rooted cuttings are blind canes, selected and preserved as already explained, and planted out in a nursery for one season. Nursery work will be described later on when dealing with the grafting of American vines.

Rooted cuttings can be left in the nursery until the time of transplanting has arrived, or they can be pulled up, when their leaves are off, and heeled in on a cool spot in damp, but not wet, soil. When digging them out in the nursery the roots and shoots should at once be trimmed off, roots from two to three inches and shoots from three to four inches from the stem. After trimming, no time should be lost to get the young plants safely heeled in, especially in dry weather, as the roots are very tender and easily dried out.

Heeling-in is performed in the following manner:—Dig a short furrow as deep as the cuttings are long, spread the cuttings out nearly vertically in the furrow in a thin layer of about three deep, and when the furrow is full cover them over with earth to

the same depth as they stood in the ground before. The ground taken out for covering the first layer of cuttings would have left a furrow in which the second layer of cuttings can be placed; these can now be covered over in a similar manner and the whole lot of cuttings treated in this way. Rooted cuttings should not be tied up in bundles when they are heeled in vertically as described, because air will enter and the roots of the cuttings in the middle of the bundle will dry out.

When the time for planting has arrived, the cuttings are taken up and removed to the field under cover of wet sacking. On the headlands of the field they should remain under a wet cover, and only small parcels, sufficient to plant one or two rows at a time, should be removed from the protected heaps.

When planting, make a square hole with a spade and put the cutting in to the depth of about a foot, filling in good soil in the bottom of the hole if it is too deep. When the plant is in position put a spadeful of loose damp soil on the roots, press this gently down with the foot and fill up the hole level with the surface.

In planting out rooted cuttings, the holes that are made to receive them form convenient receptacles for an initial manuring which can be given at this stage on poor soils, but great care should be taken not to employ any strong concentrated manure, as it will destroy the roots of the young plants. The writer had a case in his own experience where two ounces of guano, stirred in at the bottom of the holes, have proved fatal to about 40 per cent. of the vines planted out. Some slow acting fertilisers such as bone-meal and basic slag may be sparingly used without ill effects, but the best thing to use is a double handful of a well-decomposed compost. Stir the compost up with the soil in the bottom of the hole before putting in the young vines.

Laying out a Vineyard.

In former days when vines used to be planted three feet by three feet, with a maximum distance apart of four feet by four feet, the usual way of laying out a vineyard was first to walk off the whole field one way in parallel lines with spade cuts, then to strike the cord across those lines and plant the cuttings on the spots where the two lines crossed each other. But since a system of wider

planting was introduced, the system of laying out a vineyard with a wire line, divided by marks into equal divisions of four, five, six or more feet, has gained in favour, as it saves a great deal of time. The lines selected for this purpose are thin flexible brass or steel lines made up of several strands of thin wire. Hemp lines stretch too much for this purpose to ensure accuracy in the work. By means of an awl, the wire strands can be separated from each other, and in the opening thus made a piece of string or tape inserted and tied up as a mark. The wire line is tightly drawn between two posts and marked off in that manner into the divisions desired.

The next thing the planter is to be supplied with is a measuring rod for each of the linemen at the ends of the planting line. Supposing the vines are to be planted six feet by four feet, the four feet divisions would be marked off on the wire line and the measuring rods would be six feet long. To ensure the rows being equidistant and parallel to each other, it is necessary that the measuring rod should be laid at right angles to the previous row, and this object is easily reached if a crosspiece of wood of equal width right through and at least three feet long is fitted on to one end of the measuring rod in such a way that the angles made by the crosspiece with the rod are right angles. This can be tested with a square. If, when laying down the measuring rod, the crosspiece touches the line right along its whole length, it is plain that the rod will be at right angles to the line.

The planting line and measuring rods being at hand, a base line is marked off on the ground as a guide for one of the linemen. The direction of this base line will, of course, be decided by the lay of the land, a boundary road or fence. On a hillside the line will take the direction that will admit of easy cultivation by machinery.

When the base line has been laid down all the preliminaries for planting will be ready. The wire is now struck across the field at any angle to the base line that may be desired for the convenience of the cultivation of the vineyard, the lineman at the base line taking particular care that his first mark on the wire is exactly on the line. When satisfied on that point the sign is given and the other men along the wire plant their cuttings exactly at the marks and always on the same side of the wire. When the planting of the first row is finished, the

two linemen will lay down their measuring rods at right angles to the wire, as described, and only when those rods have been correctly laid down is the wire brought forward for the next row.

When the vines are planted in squares, say four feet by four feet, instead of marking off a base line, the wire line can be laid down in the direction that the front row of vines has to take and a cutting planted at each of the marks on the wire. These vines will now give the distances that the cross rows are to be planted apart, and the lineman at that side of the field can do without a measuring rod.

On a more or less level piece of ground, it is generally desired to let the cross lines cut the base line at right angles. If the measuring rods are accurately constructed, a right angle can of course be formed by running the cross line right along one of the sides of the rod after it has been laid down at right angles to the base line.

The right angle so formed can be checked by the well-known geometrical proposition that, when a triangle has one of its angles a right angle, the square of the side of the triangle opposite the right angle is equal to the squares on the other two sides. An easy way of remembering how to form a right angle in this way is to take the consecutive figures 3, 4 and 5, make 5 the side of the triangle opposite the right angle and 3 and 4 the other two sides.

Thus :—

AB = 3
AC = 4
BC = 5

Now the square of AB will be 3 by 3 or 9 ; the square of AC 4 by 4 or 16, and as 9 plus 16 make 25, which is equal to the square of BC (5 by 5), the angle at A opposite the side BC is a right angle.

For the sake of greater accuracy it is better to have the sides of the triangle pretty long and to multiply the figures 3, 4 and 5 by any other convenient number, say 10. Taking the measure

in feet, the lengths of the sides of the triangle will then be as follows :—

AB (3 by 10) = 30 feet.
AC (4 by 10) = 40 feet.
BC (5 by 10) = 50 feet.

Now take A as the corner vine in the block, mark off thirty feet along the base line and put in a stake at that point for B, then mark off in a direction, as nearly as can be judged by sight, at right angles with the base line, a distance of forty feet from point A, and put in another stake at that point for C. If the distance between stakes B and C is exactly fifty feet the angle at A is a right angle.

When the planting is started on a right angle the work is greatly simplified, especially on blocks with no particular shape, and will generally have a better finish about it, by showing straight rows from whatever point one looks at the vineyard.

When vineyards are laid out on uneven hillsides with water-worn basin-like cavities, the wire line has of course to be kept taut over these hollows, and the best way in such cases to find the spot where the cutting is to be planted is to take a pebble and drop it from the mark on the wire ; the point where the pebble strikes the ground will be the place where the cutting is to be planted.

Wind-breaks.

A newly established vineyard has got to make headway against many set-backs, such as insect pests, frost, drought, &c., but by far the worst of them in many localities is strong wind, and unfortunately this set-back is pretty general throughout the whole of the Western Province, where frequent north-west gales are experienced in the early part of the growing season up to about the middle of October and south-east gales from that time right through the summer months.

As soon as the cuttings have been planted, provision should be made against the possible injurious effects that may be caused by the wind.

Temporary wind-screens for the first couple of years may be formed by sowing strips of rye or mealies not more than ten yards apart across the direction of the prevailing winds. Rye strips can be sown from the beginning of June up to the middle

of August, but if the cuttings are not yet planted out by that time, mealies should take the place of rye and should be sown out early in the month of September. The rye or mealie strips should be well manured with concentrated fertilisers so as to promote a quick and heavy growth. The usual mode of laying out the strips is to run a furrow with a plough, spread out the fertiliser and mix it with some ground taken from the sides of the furrow, then sow the rye or mealies in the furrow and cover over with three inches of soil.

If the vineyard is laid out on an exposed and wind-swept site, it is necessary at the time of planting to make arrangements for permanent as well as temporary shelters. The distance apart of the permanent wind-breaks will of course largely depend on the situation and exposure of the land, but it is best to err on the safe side and have rather too many than too few shelters. On an average the permanent wind-breaks should be about 150 yards apart. The little loss of land occupied by wind-breaks will represent only a fraction of the damage that may be wrought at a critical time, by one storm, on an unprotected plantation.

When going in for wind-breaks in a systematic manner, it is best to divide the land in blocks by open belts running across the direction of the prevailing winds, and to plant the wind-breaks in the middle of these belts. The belts should not be less than twenty feet wide, so as to leave an open roadway of at least nine feet in width on each side of the trees. These roadways will be found useful for many operations connected with the working of the vineyard.

The choice of trees or hedge-plants for wind-breaks is an all-important question, and one on which a great deal of difference of opinion exists. Locality, site, soil, climate and other factors have to be taken into account when making a selection.

A safe rule to go by is to study in the same or surrounding districts the growth and habits of the varieties of trees and shrubs usually selected as wind-breaks.

Amongst the trees and shrubs generally planted as wind-breaks, the following may be mentioned:

(a) Break-winds for headlands or outside boundaries. For this purpose high and dense growing trees can be selected, such as Cornuta and other bushy Eucalypts, Macrocarpa and other suitable Cypresses, Oleanders, &c.

(b) Break-winds required for the body of the plantation. In this case a non-spreading, erect, and open growth is required, and trees with such a growth are Lombardy Poplar, Cotton-wood (*Populus monilifera*), and Straight Beefwood (*Casuarina leptoclada*).

(c) Shrubs for hedges used both on the boundary and in the inside of plantations. Hakea, Australian Myrtle, Saligna Wattle, &c.

Transplants, seed or cuttings of these trees and shrubs can always be obtained from the nearest Government Forest Plantation at very moderate prices.

Varieties of European Vines recommended for Cultivation.

The information supplied in this subdivision must be taken to be incomplete, as a large number of good varieties of European vines have either not yet been introduced to the Cape, have not survived, or have not yet entered into general cultivation.

The names of varieties that are mentioned in the following list will be well known to most Western Province viticulturists. For the sake of convenience and clearness the grape varieties will be classified under different headings.

Table Grapes.

White Hanepoot (White Muscat of Alexandria).—Large and loose bunch. Large oval berry, light yellow when ripe, fleshy, very sweet and musky. Very suitable for raisins and jam. Suitable for export in dry seasons. Requires lime and clay subsoil. Mid-season to late.

Red Hanepoot (Red Muscat of Alexandria). — Large and loose bunch. Large and oval berry, dark red when ripe, fleshy, sweet and musky. Suitable for export in dry seasons. Requires same soil as white variety and ripens same time.

Raisin Blanc (probably the European Olivette Blanche).—Large bunch. Large slightly oval berry, greenish yellow when ripe, pleasant sub-acid flavour. Best keeper for export. Likes loose soil, and thrives well on poor and sandy ground. Ripens late.

Red Muscadel and White Muscadel.—Bunches close and medium. Berries medium round, sweet and aromatic. Suitable for local and inland markets only. Very early.

Red (Violet) Chasselas.—Bunch long, loose, and medium. Berry medium, round, fleshy and pleasant. Mid-season to late.

Muscat Hambro.—Bunch medium and loose. Berry longish, medium, reddish black, with a delicious aromatic flavour. Mid-season.

Barbarossa.—Bunch large and firm. Berry large, round, black, with a good flavour. Suitable for export. Late.

Wine Grapes.

Sweet Red and White Wine (Constantia type).—Red Muscadel, White Muscadel, Frontignac.

Sweet Wine (Madeira type).—White Hanepoot.

White Wine (Hock type).—White Green Grape (most likely Weisser Elbling of Germany, and Vert doux or Gouais blanc of France), Riesling (small Stein), Stein (when grown in alluvial sandy soils), White French, Sauvignon Blanc, Clairette Blanche.

White Wine (Sherry type).—Stein, White Green Grape, Riesling, Pedro Ximenes (taken in with a higher percentage of sugar than for making of hock wine).

Red Wine (Burgundy type).—Cabernet Sauvignon.

Red Wine (Claret type).—Hermitage Malbeck.

Red Wine (Port type).—Pontac, Red Green Grape (when well ripe and mixed with Pontac), Red Muscadel (when mixed with Pontac).

Varieties of American Vines recommended for Cultivation.

From amongst the great number of American vine varieties that have been imported and that have originated here as seedlings, the choice of stocks, dictated by resistance to phylloxera, adaptability to soil and affinity for European varieties, is at this date confined to practically only six varieties; though it is quite possible that in course of time a few more stocks may be placed on the approved list. There is a good deal of room for science to aid the viticulturist in this important question by the production of hybrids between American and European vines. In Europe a large number of hybrids were produced mainly with the object of finding suitable stocks for soils very rich in lime, on which the American stocks generally would not thrive well,

and several of those hybrids turned out a great success. A hybrid that should prove of great value here is a cross between an American resistant variety and the Green Grape to serve as a stock for wet land. The Green Grape will flourish in such wet land where none of the approved American stocks will turn out a success, and a cross between the two may supply this want.

The six varieties of approved American stocks referred to above are : Riparia Gloire de Montpellier, Aramon Rupestris, Rupestris Metallica, Large Leaf Rupestris, Le Roux Rupestris and Jacquez.

Riparia Gloire de Montpellier.—This variety requires a rich, loose, alluvial soil. In poor soils it makes a feeble and unsatisfactory growth. It can be used as a stock for all kinds of European vines now grown at the Cape, but there is a little suspicion as to its suitability as a permanent stock for the Hanepoot. It is most adapted as a stock for white wine grapes on river soils.

Aramon Rupestris.—This stock is specially adapted for compact, plastic, clayey soils, and has been found to do fairly well on such land even if water is near the surface. It is a vigorous grower and a good graft-bearer for all European varieties tried on it except the Hanepoot, which dies back on it even after several years' apparently successful growth. Possibly some of the other varities of the Muscat family may behave in a similar manner on this stock.

Rupestris Metallica.—This variety is derived from one seedling stock selected at Groot Constantia from amongst thousands. It was picked out in the year 1894, and new stocks were multiplied as fast as possible by the single-bud or one-eye system of propagation. In 1896 a mother plantation of 2,500 vines, planted six feet by six feet, was established from the stocks thus raised, and in 1897 another mother plantation of 3,500 vines was laid out. The combined plantations have for the year 1901 given a return of 687,000 cuttings exclusive of several cartloads of thin ends. As many other mother plantations of this variety have during the past few years been laid out in the Constantia and other districts, the old mother stock, selected in 1894, must this year have given rise to an output of several millions of cuttings. The Rupestris Metallica is a strong grower and will thrive well in any loose soil, loam, gravel or sand, and also in

dry, open, heavy soils ; it can, besides, stand a fair amount of wet in loose soils. It forms an excellent graft-bearer for all varieties of European vines except the Hanepoot and possibly also other members of the Muscat family. A large percentage of Hanepoot grafts will die back on it even after a very successful start, and as a stock for Muscat Hambro its suitability is also doubted. It appears to answer fairly well as a graft-bearer for Muscadel, but sufficient experience on this point has not yet been gained to recommend it unreservedly as a stock for that variety.

Large Leaf Rupestris.—This stock requires the same soils as the Metallica, and is also suitable as a general graft-bearer subject to the same exceptions mentioned under Rupestris Metallica.

Le Roux Rupestris.—This stock had its origin from a seedling, selected by Mr. J. G. le Roux, of Klein Drakenstein, Paarl. It requires the same soil as the two preceding varieties and is a good general grafting stock. It is specially suitable as a stock for the Hanepoot and very likely also for the other Muscat varieties.

Jacquez.—This stock thrives well on a great variety of soils and is a good all-round graft bearer, but specially suited as a stock for varieties of the Muscat family, such as Hanepoot, Muscadel, &c.

Although the cultivation of American vines at the Cape can now be considered to be out of the experimental stage, several knotty problems remain to be solved, and there is still a great field open for investigation, more especially in regard to the stocks best suited for given European vines under particular conditions.

Propagation of American Vines.

Some of the American varieties that have now entered into general cultivation were, as indicated, originally obtained from seed. The general custom now is to plant cuttings.

The preparation of the soil, treatment and planting of cuttings is the same for the American vine as already described for the European vine. When a farmer is his own nurseryman, he should also have a small mother plantation of American vines for the supply of cuttings. This is far preferable to and more economical than purchasing cuttings for grafting purposes. Such

a plantation can be maintained at very small expense and with very little trouble. A mother plantation of 100 stocks can be expected to yield from 6,000 to 12,000 cuttings annually. Stocks should be planted not less than six feet apart each way.

American vine cuttings do not strike readily in newly broken-in land, and rooted cuttings should be used for planting in such cases. In well-cultivated garden soil, plain cuttings can be used.

It had at first been considered necessary to stake these mother plants, but that practice has been found to be not only unnecessary, but decidedly a disadvantage unless a system of overhead trellising from stake to stake be adopted at needless expense. The general practice nowadays is to leave the young shoots entirely alone and let them run all over the ground. These shoots frequently reach a length of fifteen to twenty feet, and in this manner straighter grown cuttings and a larger yield are obtained than by staking.

The plantation should get a liberal supply of nitrogenous manure, such as guano, in the winter, and should be frequently cultivated during the early spring months to destroy the weeds. From the time the young shoots begin to cover the ground until the vines are pruned in the following winter, no further attention is required except a couple of irrigations where necessary.

In some cases staking is considered necessary as a preventive to semi-scorching of the tops of the young shoots when trailing on the ground. It is, however, a very doubtful point whether a real or only an imaginary advantage is thus gained.

Pruning of American Vines.

The American vine stocks are generally pruned during the month of June. The strongest and longest shoots are produced when the stocks are kept low and stumpy. No attempt at training the vines to arms and branches should be made. Shoots should be cut down to one eye or two eyes, if internodes are very short, and about a dozen or more of such short spurs can be left on every stock.

Handling and Treatment of American Vine Cuttings.

When cut off from the stocks, the shoots are pulled out from the entangled mass, packed in bundles and carried off to the

headlands. Here their laterals and tendrils are trimmed off and they are cut up in short lengths, sorted into two sizes—those suitable and those too thin for grafting—and tied up in bundles of 100 each. The cutting up of shoots, trimming, sorting, and bundling of cuttings can conveniently be done under a shed in rainy weather.

The length of a cutting for grafting purposes is twelve to fifteen inches, but for convenience in handling, especially if cuttings have to be baled and packed for transport by rail, the cuttings are frequently turned out in double lengths.

Some viticulturists hold that in cutting up the shoots, the cuts should be made immediately below a bud, it being argued that a better root system will issue from the bud joint than from another part of the cutting. Experiments made at Groot Constantia have, however, conclusively proved that it makes no difference whatever to the root formation and development of the slip where the cut is made. The roots will issue and develop equally satisfactorily from the foot of the cutting, whether the end is just below a bud or anywhere else in the internode.

The root system of cuttings can be promoted by peeling off the bark on opposite sides of the cuttings, with a knife, to a distance of about three inches from the ends. Roots will be emitted from the cambium layers under the bark thus laid bare.

When a large plantation is taken in hand, it is best to have the preparation of the cuttings done by contract. The shoots having been dumped down in the rough state at the headland or shed, the usual price for trimming and cutting up in short lengths is 1*s*. per 1,000 cuttings, a double length cutting counting for two. The preservation of cuttings is performed in the same manner as already described for European vine cuttings.

Sale and Transport of American Vine Cuttings.

The price of American vine cuttings ranges from 10*s*. to 20*s*. per 1,000 for thick ones suitable for grafting, and the usual price for thin cuttings is 5*s*. per 1,000. For transport, cuttings should be tightly baled in quantities of between 2,000 and 3,000, and completely wrapped up with damp packing material in sacking. Damp oak or poplar leaves and old decaying straw

make good packing material. Leaves take a long time to get thoroughly soaked with water, and the best way to get them quickly in a condition fit for use is to put them in bags and sink the bags in a pool of water for some days. Labels get torn off in transit, and addresses should be stencilled or painted on the bales.

Establishment of Vineyards with Grafted American Stocks.

There are two main systems of establishing grafted vineyards:—

(*a*) Planting out the phylloxera-proof stocks in the field and grafting them in position.

(*b*) Planting out grafted and rooted young vines from a nursery.

These two systems will now be described as concisely as possible.

Field Grafting.—This system of grafting has not so many adherents as the other, but many cases are known where, under favourable conditions, it had been attended with great success.

When planting out stocks for field grafting, it is highly advisable to plant rooted and not plain cuttings, for the reasons already described. Such rooted cuttings should be the product of blind canes that were rooted in a nursery for one season. Before planting such canes in the nursery, all buds, except the uppermost, should be cut out to prevent suckering to the stocks in the future. Whilst the canes are growing in the nursery, get the vineyard ground ready and plant out the rooted cuttings, in the manner already described for European vines, early in the following winter in the course of the month of July. Keep the ground under good cultivation during the season, and graft the vines in the month of August of the following year. The system of grafting usually adopted in this case is the cleft-and-wedge system, but when stocks are of insufficient thickness, the tongue grafting system is preferred. Tying of the grafts is only necessary in very few cases where there is not sufficient spring in the stock to hold the graft in position. The stocks should be cut off level with or just below the surface of the ground. After the graft has been inserted, it should be covered over with a round broad mound of earth to about half-an-inch above the top bud. The scions are cut from four to six inches long and are generally

supplied with two buds. Care should be taken to prevent the scions from getting dried out, and it is best to keep them in a box under a wet cloth during the grafting operations.

When the grafting is finished, a supply of stakes should be got ready to support the shoots of the young vines, which will commence to run out about six weeks after the grafting. In the absence of anything stronger, Spanish reeds will answer well for staking. In a few protected situations staking may be dispensed with, but in the great majority of cases, especially on wind-swept sites, staking is necessary to prevent the grafts from being blown to pieces by the high summer winds.

Severe short topping of the grafts is sometimes resorted to instead of staking, but this is a bad practice, as it greatly checks and retards the growth of the young vines. The more leaves the young vines are allowed to bear, the more vigorous will be their growth. Of course if the growth is too rank and the foliage becomes too heavy for the stalks it will become necessary to cut the vines back judiciously.

In the month of December the grafts should be laid bare during cool weather, and all roots emitted by them removed by a sharp knife and a downward cut. After the roots are removed the grafts should be covered half-way with earth again to prevent scorching of the tender bark at the joint by the sun. In the month of March the roots are removed a second time and the grafts are then left uncovered, as by that time the cool autumn weather would already have set in.

Any gaps formed in the vineyard should be filled in during the following winter with young grafted vines, and, to be able to do this, it is necessary to run a small nursery in conjunction with field-grafting operations.

Planting of Nursery-grafted Vines.—If the grafted vines have been purchased, they will very likely require some root pruning and also top pruning. The roots should be cut off to within three inches from the stem, and all shoots should be cut away except one or two of the strongest required for the future body of the vine.

Nursery-grafted vines are planted out in the same manner as described for rooted European vine cuttings, and the caution against the use of strong concentrated manure must be repeated. In planting, the graft-joint or suture should be kept just under

the surface of the ground, and, when the planting is finished, a mound of earth should be heaped round the graft, with only the young wood left exposed. This mound serves to protect the graft from being blown over by the wind. Staking can be done away with in this case unless it is intended to trellis the vineyard, when staking is advisable in order to get long straight stems for the trellised stocks. Short topping should also be avoided in this case.

If a good round mound of earth has been formed high up round the vines, there is little danger of their being blown over by the wind, and the shoots can be left to run over the ground without interference. The roots emitted by the grafts should be removed in the same manner as described with field-grafted vines. Any vacancies should be filled in from the nursery during the following planting season.

Nursery Grafting of American Stocks.

There are two systems of nursery grafting :—

(*a*) Grafting of plain cuttings.

(*b*) Grafting of rooted cuttings.

Plain Cuttings are usually grafted indoors, or under a shed, at a table, and the system of grafting adopted is that known as tongue-grafting or whip-grafting.

It is important, when grafting plain cuttings, that the scion and stock should as nearly as possible be of equal thickness, so that a union of the cambium layers under the bark is made possible all round. Before grafting, all the buds of the stocks should be cut out to prevent suckering. Grafts are usually cut to two buds—three buds if internodes are very short and one bud if very long.

Several kinds of apparatus, such as grafting tubes, &c., held to facilitate the grafting, have been introduced, but an experienced grafter requires nothing more than a good sharp knife. The graft is kept in position by being tied to the stock with some binding material; sacking is sometimes used, but the best material is raphia, a pound of which, costing about 9*d*., will be sufficient for tying up over 1,000 grafts. There is no uniformity in the quality of sacking, and in many cases it does not rot off in time and cuts into the graft, thereby causing a defective joint.

It must be distinctly understood that the object of tying up the grafts is merely to keep them in position and has nothing to do with the success of the suture. In the early days of grafting it was considered necessary to cover the joints as nearly air-tight as possible, and various devices were used with that object in view, such as first wrapping tinfoil round the joint and then tying the raphia as tightly and closely as possible round it, or tying the raphia closely and tightly round the joint and covering the whole tied-up joint with grafting wax. Of late it has been found that that system of air-tight tying is not only quite unnecessary but very disadvantageous to the success of the grafts. The connection between scion and stock takes place by means of the outgrowth of callus from under the bark of each, and, as air and moisture promote this formation of callus, it is readily understood that the exclusion of these factors is highly detrimental to the success of the grafting.

If it were possible to prevent any displacement of the grafts before and during the planting, tying would be unnecessary in all cases where there is a good fit; but as such displacement is bound to take place, a certain amount of tying has necessarily to be resorted to. A piece of raphia about nine inches long that will make three or four windings round the joint and leave open spaces in between will be ample. After the cuttings are grafted, they can either be planted out in the nursery at once or preserved for a period of four to six weeks until a convenient time for planting has arrived.

Other circumstances being equal, it makes no difference to the result of the grafting whether the cuttings be planted out directly after the operation or properly preserved until the grafts start budding and then planted out. Cases will, however, frequently occur in which it will be impossible to plant out the cuttings on the same day or in the same week as they are grafted; for instance, the ground may not be ready or too wet to work in, or the Superintendent of the Nursery may be otherwise engaged. In such cases, the grafting operations will not be interrupted, but the grafted cuttings preserved in one of the following ways: For a period of one or two weeks the cuttings can be kept in a room, or outside in a protected shady place, with wet bags or leaves over them, the pile to be watered daily. For a longer period, the grafted cuttings should be stratified in

a mixture of moist sand and leaf mould. The pile should be under cover to keep off sun and rain, and be made as close to the nursery as possible for convenience in the further handling of the grafts. If no room or shed is available, a frame of rough boards constructed in a corner of the nursery ground and covered over with a roof composed of rushes or sheets of galvanised iron will do well. The cuttings should be stratified in a slightly vertically inclined position, grafts upwards. One layer of cuttings, two deep, having been placed in position, cover them over with sand; then lay on and cover over a second layer, and so on until the pile is about three feet high. Put an extra supply of sand on the top layer of cuttings and water the pile now and again to keep it moist. Cuttings can be preserved in this manner until the grafts start budding, which means an average period of about six weeks.

Raphia will rot off in the sand pile within four weeks and should be steeped in a solution of blue vitriol to preserve it for a longer period. Experiments have been made with raphia steeped in vitriol solutions of various strengths, ranging from $\frac{1}{4}$ per cent. to 3 per cent., and it was found that the strength of the solution should not be over $\frac{1}{2}$ per cent., the raphia to be steeped in such a solution for twelve hours. A $\frac{1}{2}$ per cent. solution is equal to $\frac{1}{2}$ lb. to ten gallons of water. If the raphia is soaked in a stronger solution it will not rot off in time and will have to be cut loose in the nursery afterwards. This is a delicate piece of work that takes a lot of time. It must, however, be noted that the quality of raphia in the trade is found to vary now and again, and, if the raphia should be old and easily broken when pulled apart, a slightly stronger solution will be necessary.

Nursery Planting of Grafted Cuttings.—The nursery should be located in such a position that it will catch as much of the winter sun as possible, and should be protected from the prevailing winds, especially the summer winds. The ground must be trenched at least two feet deep and should be loose and friable, well drained and irrigable. It is not an easy matter to get the right site and soil for a vine nursery, and no pains should be spared to get the best possible place. The treatment of the cuttings, after the grafting, has as much to do with the success of the grafts as the grafting itself. The nursery rows should be two feet apart and the grafts three inches apart in the row.

A planting board will be found of great assistance, especially if unskilled labour is employed. The board should be about fifteen feet long and three inches broad and marked off with parallel lines (saw cuts), three inches apart, on one of its flat sides. Two supports should be nailed to the unmarked side of the board so that it can stand on edge when put down. The planting is done in the following manner : Strike the line, make a deep vertically inclined cut with the spade all along it and dig out a furrow along the cut. Now place the planting board on the firm, bank side of the furrow, with the division lines facing the planter, and plant the cuttings in the furrow against the lines on the planting board at such a depth that the tops of the grafts are level with the upper surface of the board. A cutting that is too long must be pressed deeper in the furrow, and when the graft does not reach the top of the board the furrow should be filled up to raise the cutting.

When the cuttings have been planted along the whole length of the board, the ground taken out of the furrow is gently thrown in, after having been well pulverised. When the furrow is about half full, press the ground down with the foot, then fill up the furrow, remove the board, and heap the ground up in a broad ridge round the grafts. If the ground is of a sufficiently sandy nature that it will not cake after a rain, the grafts can be covered over altogether with about an inch of the ground over them ; but if there is any doubt about the quality of the soil, the top buds should be left exposed and a layer of leaf mould mixed with sand put on the top of the grafts. The necessity for the tops of the grafts to be all on a level with the planting board, or in one horizontal line, will now become apparent. If the tops of the grafts were to be in an uneven line, some grafts will get too much soil on them, and others will be insufficiently covered and dry out. The ridge of ground round and over the grafts is necessary to keep them alive until the union with the stock is formed—an interval of between two and three months. It is consequently of importance to keep an eye on the nursery, and to replace the ridges if washed off by heavy rains. A pointed pyramid-shaped ridge is much sooner washed off by rain or dried out by wind than a round broad ridge.

When working in small gangs, each man doing a particular part of the work, the planting can be done at the rate of a

thousand cuttings per man per day. Care should be taken during the planting operations that the grafts are not exposed too long to the sun and wind, and it is best to deal with small parcels at a time, and keep the main lot damp and under cover. After planting, the ground between the nursery rows has to be kept loose and free from weeds.

Irrigation can often be done away with, and is in most cases not necessary till about the month of December. The nursery soil can rather be a little too dry than too wet, as wet land causes a defective root-formation and poor, sickly growth.

The grafts, being covered over by the soil, will throw out roots, and to ensure a proper junction with the stocks, it is important that those roots should be removed. It will, however, be a mistake to interfere with the grafts too soon, and they should not be disrooted until the beginning of December, when cool and cloudy weather should be selected for the work. The ridges are then carefully removed, the grafts laid bare down to the junction, and any roots emitted by them cut off with a downward cut by a sharp knife. After disrooting, the ridges should be partially thrown up again, say a little higher than the junctions. This is advisable to prevent sun-scorching of the delicate tissues of the sutures. About two months afterwards the grafts are disrooted a second time, and then left uncovered. If the growth of the grafts is very strong a little judicious topping becomes necessary, but hard topping should be avoided.

Nurseries are easily attacked by oïdium, owing to the close growth of the vines, and frequent sulphuring is necessary to keep the vines free from that disease.

Nurseries should be enclosed by wire-netting to keep out fowls, dogs, and other undesirable animal life. The same nursery ground can be used over and over again for any number of years, provided it is every season well trenched and manured. As a matter of fact the longer the land is used, the more suitable it will become physically for nursery purposes, and a good layer of compost with a sprinkling of guano, spread over the surface before trenching, will supply the necessary plant food. At Constantia the average success of grafts on plain cuttings is 60 per cent.

When taking up the grafted vines for planting in the field, all those with defective joints should be sorted out and kept apart.

It is better to plant such grafts out in the nursery for another season than to risk them in the open field. In the nursery the joints stand a better chance of healing up properly.

Graftings of Rooted Cuttings.—When grafting rooted cuttings, the cuttings may either be taken up, grafted under cover at a table, and replanted, or they may be grafted in position in the nursery rows. The latter is by far the better system of the two, as it will produce a larger percentage of successful grafts, and a stronger, healthier growth, besides saving a good deal of labour. This system of grafting—the grafting of rooted cuttings *in situ* in the nursery—has proved a great success in localities where, owing to unfavourable conditions of soil and climate, the grafting of plain cuttings has been more or less a failure.

Selection and Preservation of Scions for Grafting.

The importance of a proper selection of scions for grafting will strike us when we reflect that cuttings are productions of the original plant and carry all its qualities. The necessity of a careful selection will still further come home to us when we consider that one mother vine may produce as many as fifty scions—double that quantity when vines are trellised—and if only half of these are successful, every bad mother stock may be responsible for about twenty-five bad vines in the new vineyard, and those bad vines will in all probability remain in that vineyard for a period of 50 to 100 years. The selection of scions should be taken in hand quite six or seven months before the scions are required. In the summer, when the grapes are ripening, the vines, from which it is intended to cut the scions later on, should be carefully marked out by a piece of tape or calico tag. This precaution is necessary, as in most vineyards one meets either with a mixture of different varieties of grapes of the same class—such as white and red muscadel, white and red hanepoot, &c.,—or a mixture of good and bad bearers of the same kind.

Only such vines as combine all the qualities which we wish to perpetuate should be selected. They should be of healthy growth and bear an abundant crop of typical grapes.[1] In the

[1] Some *vignerons* carry the process of selection so far that they only take such shoots from the selected vines as have borne at least two bunches of grapes.

case of table grapes, the size of the bunch, the shape, flavour and firmness of the berry are factors that should not be overlooked in the selection.

If the grafting is commenced with early in the season, the daily requirement of scions can be freshly cut from the vines; but if the grafting is continued beyond the pruning season, the cuttings for scions should be preserved in the manner already described under the heading "*Collection and Preservation of Plain Cuttings.*" The colder the place selected for the preservation of the cuttings the better. On a warm spot the scions will soon start budding and become useless. If the scions are removed from the mother stocks in good time, before the buds are swelling, and preserved in a cold place, they will remain sufficiently dormant up to the middle of September and in some cases up to the end of that month.

Pruning and Training of the Vine.

Pruning is performed with shears or knives. Shears do cleaner and quicker work. There is probably no plant under cultivation that has been subjected to so many different systems of pruning and training as the vine. A volume can be written on this subject, but, unless accompanied by copious illustrations, literature on pruning is unintelligible to the uninitiated reader. The best way, after all, of learning how to prune a vine is to watch an experienced hand at the work and question him freely on all points on which information is required.

Of the various systems of training, the only one that up to quite recently was adopted by Cape *vignerons* is the "bush" or "low-head" system. When pruning the young vines on this system, the object is to get a straight single trunk, of at least six inches in height, with four or five arms radiating out from the head of the trunk in a cup-shaped form, that is to say, the arms are to be trained upwards and outwards. Whilst the vines are still young, the object of pruning should be more directed to giving the vines a proper form than to getting the heaviest return from them. If they are badly shaped when young, they will always retain that defective formation.

In pruning bush vines, the rule is to leave the strongest and best-shaped shoot at the end of each arm or branch and to cut

it down to two buds. This little spur is then called a bearer. In the case of certain varieties of vines that do not bear well on short wood, this system of pruning is altered in so far that, on two opposite arms of the vine, a long shoot is left in addition to the short spur, and these two long shoots are then plaited together. In the following season these long shoots are cut off and two fresh shoots of new wood are again left and plaited.

Trellising.—The trellis system of training vines has been introduced at Groot Constantia with very satisfactory results. This system is naturally capable of undergoing a great many variations. This trellis may consist of one, two, three or more wires, and the vines may be trained in various ways along those wires. In regard to the training, one main point must always be kept in view, and that is, that some varieties of vines require short pruning and others long pruning. By short pruning is meant that the bearers should all be short spurs on old wood, and the term long pruning signifies that long young shoots should annually be left on the vine as bearers in addition to a diminished number of short spurs, required for producing long wood for the following season.

It will readily be seen that when the long-pruning system is adopted on trellises, the main branches of the vine should only be allowed to extend about half-way as far from the trunk, as in the case of the short-pruning system. The Hermitage vine, for instance, requires short pruning, and, in training this variety on a wire trellis, the leading shoots of the young vine will not be pruned back until within a distance of six inches from the leading shoots of the vines on either side. These leaders will be allowed to become main branches, and the shoots running out of those branches will yearly be cut down to short spurs. If long pruning were adopted with the Hermitage vine, the grapes will often be found deficient in sugar, and the colour may remain pinkish instead of turning into a dark purple. The Cabernet Sauvignon, on the other hand, must be pruned long as it only bears half a normal crop when pruned short.

The following are some of the well-known grape varieties suitable for short and long pruning:—

Short Pruning.—Hermitage, Barbarossa, Hanepoot, Raisin Blanc, Green Grape, Stein (heavy wine), Muscadel, Frontignac,

Long Pruning.—Cabernet Sauvignon, Riesling, White French, Stein (light wine), Crystal, Pontac.

At Constantia, experiments with one, two and three wires to the trellis were made, and the two-wire system was eventually adopted as giving the best results consistent with economy. The bearing branches were trained on the lower wire, and the young shoots—tied up where necessary—allowed to support themselves by their tendrils on the upper wire. The wires should be eighteen to twenty-one inches apart and the lower wire two feet from the ground. It is advisable to use galvanised wire, as black wire has been found not to last longer than about eight years. No. 9 wire is quite strong enough for the purpose, and No. 10 wire may probably be found suitable also.

In connection with trellising the following points deserve attention :—

(*a*) The average length of the trellis should be 100 yards, as longer distances take up too much of the time of the labourers when carrying grapes, &c., out of, or manure, &c., into the vineyard.

(*b*) The end posts of the trellis should be of a permanent nature and consist of strong iron standards.

(*c*) The wires should be fixed on the end posts, with a device for tightening them when required. No matter how tight the wires are strained when put up, they are sure to get slack again.

(*d*) The trellis should run in a direction with the prevailing summer winds and not across the main wind currents. The free passage of the wind through the vineyard is necessary to dry up the ground and leaves after rain or dew and thereby prevent the spread of fungoid diseases.

The trellis system has a great future before it and will become popular when its advantages come to be fully appreciated. The fact must not be lost sight of that, in dealing with grafted American vines, the experience gained in the cultivation of the ungrafted European vines will in many cases not hold good. Amongst the advantages of the trellis system the following may be mentioned :—

(*a*) The average price of grafted vines is £10 per 1,000, and as the bearing surface of the vines will be larger on the

trellis than without it, a smaller number of vines can be planted to a given area.

(*b*) Trellised vines will produce a sounder wine through producing sounder and healthier grapes. On the trellis, the grapes hang free and open in the air and do not come in contact with the ground (as can be so frequently observed with bush vines), where they get damaged by insect life and decayed. The trellis will also produce better shaped and uniform bunches for the market.

(*c*) Grafted vines will suffer far less damage from strong winds when trained on a trellis than when planted in the open with or without stakes.

(*d*) In districts subjected to late frosts, the trellised vines, through being raised from the ground, may suffer only a fraction of the damage that may be done to bush vines.

As the trellis system enables the land to be worked in one direction only, cases will sometimes occur where it cannot be introduced.

A point to be considered in planting and training is whether, other circumstances being equal, the trellis will not prove to be more suitable for the production of light wines and the bush for the production of heavy wines. Experiments seem to point in the direction that grapes grown on bush vines contain more sugar, when ripe, than grapes grown on trellises, but this has not yet been fully tested, and the remark is merely thrown out as a hint.

It will be gathered from the foregoing remarks that vineyards intended for trellising should be specially laid out with that object in view, but besides the adoption of a special system of planting, the young vines should also be specially trained up for the trellis.

Trellises should be put up in the season following that in which the vineyard is laid out, and in the planting season the young vines should be staked in order to produce straight trunks from one and a half to two feet in height from the head of which the arms of the vines will branch out along the lower wire.

Stout and well-matured Spanish reeds will answer well as stakes for such young vines, and *vignerons* intending to go in

for trellising should therefore in good time lay out plantations of these reeds along their main water furrows or in swampy waste land.

Times for Pruning.

The best time for pruning varies with the variety of vine, district, soil and site, and has to be learned from local experience. The fruit-pruning season ranges over a period of three months, from the middle of June to the middle of September. The vineyards on dry mountain slopes will bud earlier than those in low-lying cold valleys, and should be pruned comparatively earlier also; similarly, early budding varieties should be pruned before late sorts.

The best time for pruning in different localities can be found out by the new comer from practical men in the neighbourhood, as this is a subject which *vignerons* usually study with very close observation.

As a rule, early pruning makes stronger wood and late pruning gives a heavier crop of grapes, from which it follows that young and weak-wooded vineyards should always be pruned before older and healthier vineyards.

As the pruning comes off at a very busy season of the year and at a time when, owing to winter rains, the labourers are frequently prevented from turning out to work, a good practice, largely followed by the Western Province wine farmers, is to "clean-prune" the vineyards in autumn when the leaves begin to turn yellow. This clean-pruning consists in the removal of suckers and such shoots as are not likely to be required for bearers. The autumn is a slack time of the year for the wine farmer, and the clean-pruning greatly facilitates the future fruit pruning and does no harm to the vine.

The clean-pruning period also varies in different localities and extends from the beginning of April to the middle of June.

Cultivation of Vineyards.

In dealing with the broad question of cultivation it is necessary to divide the subject into two headings, viz.: winter and summer cultivation.

Winter Cultivation consists in turning the soil over to an average depth of about six inches for the double purpose of

loosening it and destroying the weeds. This cultivation is done either by hand-digging with spades or forks, by ploughing up the land with specially constructed vineyard ploughs, or by a combined digging and ploughing. Hand-digging makes the best work, but cannot be carried out on a large scale on account of scarcity of labour and its costliness.

The special ploughs constructed for vineyard work answer the purpose very well and enable the *vigneron* to have large areas cultivated at small cost.

The winter cultivation should generally be commenced with as soon as the ground is soft enough after the first rains have fallen. If the cultivation be then delayed, a crop of weeds will soon spring up and the work will be made much more troublesome and expensive. In particular cases, however, where green manuring will be of advantage, such as in very sandy or stiff clayey soils, the cultivation may be put off until a good crop of grass can be turned over, which, in decomposing, will improve the physical nature of the land.

The *Summer Cultivation* consists in keeping the land loose, open, and free from weeds. This work is done by combined hand and horse-hoeing, and should be continued up to the time when the grapes start colouring. It should be borne in mind that one of the effects of cultivation is that the natural moisture of the land is largely preserved, and in that respect it serves the same purpose as irrigation.

Excessive cultivation of vineyards, newly laid out, on unprotected wind-swept sites and in loose or sandy soil should, however, be guarded against, as a heavy windstorm may blow away the loose upper strata of the land and greatly damage the young vines.

Manuring.

The vine, in common with other plant growth, requires a sufficient supply of the compounds of the three main elements of plant food—nitrogen, phosphoric oxide and potash—in order to produce a full crop. Lime enters largely also into the composition of the different parts of the vine and has an important effect on its general health and on the quality of its produce. Where soils are deficient in lime, this element of plant food should also be included in the manure.

According to Von Babo and Mach's standard work on viticulture, the vines on an acre of land abstract, on an average, the under-mentioned quantities of above elements of plant food from the soil yearly:—

67 lbs. of Nitrogen.
60 lbs. of Potash.
53 lbs. of Lime.
15 lbs. of Phosphoric Oxide.

The above data will give the viticulturist a rough idea of what the fertilisers that he buys in the market should consist of.

Some naturally rich soils can do without manure for a number of years, and, when a superior quality of wine is gone in for, the vines should, as a rule, only receive manure when they show a want for it.

The Best Manure.

The best vine manure is a well-rotted compost, consisting of the manure of animals (horses, cattle, sheep, goats, pigs, &c.), vegetable matter (veld bushes, hedge prunings, vine cuttings, tree leaves, straw, grass, &c.), and other refuse, such as road-scrapings, wood ashes, burnt and unburnt bones, &c.

If such a compost is well prepared and preserved, it will contain all the necessary elements of plant food, and will besides have a good physical effect on the soil in various ways, especially by loosening and opening stiff, clayey soils and increasing the humidity of dry, sandy soils. A mixed farmyard manure of the kind described can either be applied in holes or furrows, which should be made about eighteen inches deep. A large portion of the manure will only gradually become soluble and available for plant food, and if the manure is not buried to a sufficient depth it will dry out in the summer months and be more or less useless for that season. If holes are gone in for, they should be made midway between four vines. On poor soils, manure is generally applied every alternate year, or every third year, according to the growth of the vines, and the holes should be successively made in a new square, so that it will take eight or twelve years before the same hole is opened again. Furrows are made successively in alternate rows of vines and are drawn with

a plough, followed up by the spade if the plough does not go deep enough.

When farmyard manure is used, holes are generally preferred, as, owing to the slow decomposition of the manure, it is not considered advisable to turn it up again before it is thoroughly exhausted by the roots, which is sure to be the case after it has been buried for a period of eight to twelve years as described.

A bushel of farmyard manure is generally allotted to every hole when vines are planted four feet square, and that quantity can serve as a basis of calculation for the requirements of vines planted wider apart. The manure should be put into the ground as early in the season as possible, or, in other words, as soon as the winter rains have soaked in to a sufficient depth to enable the holes to be made. Before the rainy period commences, the manure should be carted out of the compost-holes, or cattle kraals, into heaps on the vineyard roads, from where it is carried off into the vineyard with baskets. The compost-holes and kraals are rarely covered over by a roof, and if the manure is not removed before the rains have set in it will become very wet and heavy for further handling. On the vineyard roads, the manure should not be left longer than is absolutely unavoidable, as otherwise its most valuable portion—the soluble constituents—will be drenched out by the rains.

After the manure has been thrown into the holes, all prunings, weeds or leaves that are lying about are thrown in on the top of it. In some cases, where the manure is of poor quality, an artificial fertiliser is also added to it after it has been deposited in the holes. When the manure, &c., has been thrown into the holes, a layer of a couple of inches of soil is spread over the mixture to prevent loss by evaporation. The holes are left open till after one or two strong rains have fallen—which will aid in washing some of the soluble constituents of the manure down to the roots for immediate use—and then closed up.

Concentrated and Artificial Manures.

In cases where there is not a sufficient quantity of farmyard manure available, recourse must be had to other fertilisers, either natural or artificial.

Amongst the natural fertilisers, more or less suitable as vine manures, may be mentioned the large deposits of pure kraal manure in the Karroo districts, guano, poudrette, bonemeal, fish offal, wood ashes, lime, &c.; and, amongst artificials, there are several good patent and proprietary manures in the market, for full details of which the reader must turn to the volumes of the "Agricultural Journal," issued by the Department of Agriculture, as it is not within the scope of this short treatise to deal with this comprehensive subject exhaustively. Suffice it to say that, in vineyards where the crop is used for making wine of a high class, concentrated nitrogenous manures should be sparingly used, say at the rate of 500 to 1,000 lbs. to the acre, as a large percentage of nitrogenous matter in the grape is not conducive to the making of a good wine. For brandy-making and the production of table grapes, this quantity can be increased.

Complete fertilisers, imported and manufactured by various Colonial firms, with due regard to the special requirements of the vine, can be applied at the rate of 1,000 to 2,000 lbs. to the acre. There was a time when the public was quite as much imposed upon, by the unscrupulous merchant, with patent manures as with patent cures. With the advancement of knowledge, things have greatly improved, and most merchants are now publishing the analysis of their fertilisers in their advertisements. What the farmer must now do, in case of doubt, is to get from the merchant, at the time of purchase, a certified copy of the printed analysis to the effect that the parcel of manure bought by him contains the elements of plant food in quantity and solubility as stated. No merchant doing a straightforward, honest business will refuse to give the buyer such a certificate.

The following table of the money value of the four main elements of plant food represents roughly the basis (at Cape Town prices) on which the values of fertilisers are calculated in the Government Analytical Laboratory:—

Lime—in the form of pure unslacked lime ...	$\frac{1}{2}d.$ per lb.
Potash	$3\frac{1}{4}d.$,,
Nitrogen	$9d.$,,
Soluble Phosphoric Oxide	$3\frac{1}{2}d.$,,
Insoluble ,, ...	$2d.$,,

Calculated at these rates as an example, the value of a ton of guano of average quality will work out as follows :—

	Per cent. (or per 100 lbs.).	Per ton of 2,000 lbs.	Value.	Total. £	s.	d.
Lime	14	280	$\frac{1}{2}d.$ per lb.	0	11	8
Potash... ...	2	40	$3\frac{1}{4}d.$,,	0	10	10
Nitrogen ...	8	160	$9d.$,,	6	0	0
Sol. Phos. Oxide	2	40	$3\frac{1}{2}d.$,,	0	11	8
Insoluble ,,	10	200	$2d.$,,	1	13	4
				£9	7	6

In the case of mixed fertilisers, prepared for a special purpose, the cost of preparation will have to be added to above valuation.

Like with other commodities, the prices of manures are fluctuating according to supply and demand.

A point that must also be borne in mind is that the analysis of a fertiliser will only give a rough idea of its immediate value as a manure, inasmuch as only a portion of its ingredients may be readily available as plant food. It would have been noticed that phosphoric oxide has a higher and lower value according to the form in which it exists in the manure—soluble or insoluble. In buying manures by analysis, this point is of importance to the farmer, and a short explanation will not be out of place.

When determining the value of fertilisers, according to their content of plant food, chemists imitate nature as far as possible. It has been proved by conclusive experiments that plants take up their food from the soil not only when it is in the state of a watery solution, but that from the roots of the plant an acid is secreted which dissolves solid plant food elements in the soil and enables the roots to absorb the plant food thus dissolved. Following up that discovery, chemists now employ an organic acid, namely citric acid, as a solvent for the plant food in fertilisers, as by the use of that acid the solvent action of the root acid is closely imitated. When the analysis of a fertiliser shows a certain percentage of its phosphoric oxide as soluble it generally means that that amount is soluble in citric acid and likely to be in a form in which it can directly be taken up by the roots of plants, whereas the insoluble portion has first to undergo

decomposition for a period of months or years before it is reduced to a form available for the plant.

A phosphatic fertiliser, such as basic slag, may show by analysis to contain 20 per cent. phosphoric oxide, out of which only 5 per cent. may be soluble. The difference in the value of such a sample of slag, if the value of phosphoric oxide be calculated at the higher rate only and at the differential rates laid down in the price list, will be £1 17*s.* 6*d.*, as shown by the following calculation :—

	£	*s.*	*d.*
20 per cent. = 400 lbs. to the ton at 3½*d.* per lb. =	5	16	8
5 per cent. (sol.) = 100 lbs. per ton at 3½*d.* = £1 9 2			
15 ,, (insol.) = 300 lbs. per ton at 2*d.* = 2 10 0	= 3	19	2

It is therefore of great importance to the farmer that he should go about his business in a thorough manner, and, if he should decide to buy his fertilisers by analysis, that such analysis should show both the soluble and insoluble amount of phosphoric oxide. In the case of the other plant food constituents it has not been found necessary that such a distinction should be made.

Guano.

For vines that are weak in wood and for which a strong stimulant is required, guano can be highly recommended. It is generally supposed that the guano, derived from the islands round about our coasts, is a one-sided nitrogenous manure, but the analyses of the article certainly do not bear out that prevalent idea.

The average percentages of the four essential elements of plant food found in twenty-five different samples of guano, selected and examined at various times, during the period 1890—1898, by six different Government analysts are as follows:—

Lime	13·35.
Potash	2·09.
Nitrogen (Ammonia)	8·45.
Phosphoric Oxide (total)	12·69.

It will thus be seen that Cape guano is distinctly a nitrogenous-phosphatic guano, and, as it contains lime and a small quantity of potash as well, it may in a sense be regarded as a general manure. As a vine-manure by itself it is too low in potash

and rather rich in nitrogen; but in conjunction with farmyard manure, which is generally very poor in nitrogen and comparatively rich in potash, it is known to give very good results when applied to vines, and can safely be recommended.

Concentrated and artificial manures are more advantageously applied in furrows than in holes, as they get better mixed up with the soil in the furrows and will be less likely to cause injury to the tender roots. As an additional safeguard against such injury, the fertilisers should be well stirred up with the loose soil in the furrows. In such fertilisers the plant food is generally pretty soluble and will have been leached out by the rains before the furrows are opened again in four or six years time. These fertilisers are also generally applied later in the season than farmyard manure.

The time for putting such concentrated fertilisers into the ground will depend largely on their nature and on the physical qualities of the soil. Land with a substratum of clay that will absorb and retain the soluble portion of the manure can be manured earlier in the season than loose sandy soils that have not got such retentive properties; and highly soluble manures, such as superphosphates and guano, should be applied later in the season than a slow-acting manure such as bonemeal.

Lime.

As most of our vine soils are very poor in *lime* and this article can be cheaply obtained, it can be broadcasted liberally at the rate of a ton or more per acre—heavier dressings on clay soils and land full of vegetable matter than on sandy soils.

According to a series of analyses made, by Government and private analysts, the soils of the Cape, Malmesbury, Stellenbosch, Paarl, Tulbagh, Caledon, and Bredasdorp Divisions contain on an average less than $\frac{1}{2}$ per cent. of lime. Analyses of Worcester, Robertson and Swellendam soils showed an average lime content of from $\frac{1}{2}$ to 1 per cent.

With regard to the use of lime, it must be remembered that agricultural chemists claim for it a fourfold effect on the soil:—

1. It serves as a direct plant food.
2. It combines with and breaks up compounds of unavailable plant food and sets the plant food in such compounds free for the use of the plant, *e.g.*, potash, ammonia.

3. It has a good physical effect on clay soils and makes them more friable and pervious.
4. It neutralises the sourness of soils, which causes a sickly plant growth. As such sourness is due to the action of excess of water on the vegetable matter in the soil, liming, to be effective, should be accompanied by draining.

Lime should be added to the soil in a burnt condition, as, by slacking the burnt lime, it can be reduced to a much finer powder than the limestone or shells could be by mechanical means, and the finer its state of division the more intimately it can be mixed with the soil and the sooner it will exert its beneficial influence. The burning also reduces the lime to a caustic state, in which it has a more powerful effect than in the natural state. The beneficial effects of lime will generally be more noticeable in the second and third year than in the first.

With regard to the application of nitrogen, it must be remembered that although the vines abstract a larger quantity of that plant food from the soil than of any of the other essential elements, it is present in the air in combination with other gases and is washed down into the soil by rains and absorbed by the soil, especially when damp, in quite appreciable quantities. Chemists estimate that the amount of nitrogen by which the soil may thus be enriched varies with circumstances from 5 lbs. to 20 lbs. per acre per year.

In our pure South African atmosphere, comparatively free from gases arising from the decomposition of vegetable and animal matter, it is likely to approach the minimum and perhaps to go below it.

Agricultural chemists have also proved that plants receive a portion of their nitrogen through a process of nitrification going on in the soil by means of bacteria with which loose, open, well-drained soil is teeming, and which produce nitrogen in a form available for the plants out of non-available nitrogenous compounds.

Sulphuring.

In 1858 the fungoid vine disease, well known by the name of Oïdium, was first detected at the Cape on the High Constantia estate in the Cape Peninsula. Soon after its establishment it

spread rapidly inland and caused a great deal of damage. As the disease made its appearance in the European vineyards about ten years earlier, the Cape *vignerons* soon received advice from Europe as to the best remedy against the new disease. Fortunately it was discovered in Europe that the use of flowers of sulphur was an excellent remedy, though not quite a complete one in certain localities, and the Cape men were not slow to benefit by that experience. The best way of applying the sulphur is to blow it on the vines as a fine dust with a pair of sulphur bellows specially constructed for the purpose.

In districts with a damp climate, like Constantia, sulphuring should be commenced with when the young vine shoots are about six inches long, whether there are any signs of the disease or not, and continued fortnightly until the grapes turn colour. Frequent small doses are far more effective than fewer large doses, and the sulphuring should always be repeated on the first suitable day after a rain. It is a good principle rather to use too much than too little sulphur, as a saving of a couple of hundred pounds may mean the loss of 25 to 50 per cent. of the crop and turn out to be very false economy. The work is most effectively done on calm sunny days after the dew is off the vines. If the leaves are wet with dew, they will catch up the sulphur and prevent it from penetrating through the whole body of the vine.

Some grape varieties, such as the Stein, are attacked by the disease in a worse degree than others, and have to get a couple of extra doses of sulphur.

In Constantia the average quantity of sulphur required for a season is 80 lbs. per acre, but in districts with a dry climate only a quarter of that supply may be found sufficient. As regards the quality of sulphur to be used, two main points deserve attention :—

(*a*) The sulphur should be in the finest possible state of division.

(*b*) The sulphur should not be damp.

The finer the sulphur, the greater the surface that it will cover, the better it will cling to the leaves and other parts of the vine, and the more rapidly it will oxidise and produce acid vapours which mainly destroy the oïdium fungi. We say "mainly," as it is presumed that sulphur destroys fungus

directly by mechanical contact as well as in the oxidised or vaporous form.

If the sulphur is damp, it will be cloggy and not dusty. In such a condition, the work of sulphuring cannot be carried out with that despatch which every practical *vigneron* knows to be so desirable, as in many seasons the days or portions of days suitable for sulphuring are so very few.

Analyses at the Government Laboratory have proved that the different brands of sulphur in the trade are remarkably free from adulteration, so that, for the present at least, the viticulturist need not trouble himself in regard to the purity of that article.

Topping.

By the term "topping" we understand the cutting off of the tops of the young vine shoots when they have reached a certain stage of development. Until the young vine comes into bearing, the shoots should be topped as little as possible, as a heavy foliage will produce strong wood growth and is practically as beneficial to the young vine as a heavy manuring. Supposing a farmer manures his young vines heavily, but keeps topping them very short, as the writer has not infrequently observed, he is largely taking away with the one hand what he has been supplying with the other. The result is that his young vines will remain dwarfish and make very slow progress. One need only watch the effect of frequent topping on hedge plants to see how stunted they get in their growth. The reason given for this short topping is to prevent damage from strong wind. Whilst a certain amount of topping against wind-storms is admitted to be necessary, there is no doubt that the practice is often overdone.

There are other safeguards against wind-storms besides short topping, such as earthing-up and staking of the young vines and the erection or planting of wind-screens.

Excessive topping is equally harmful to older vines that are in bearing, but a reasonable amount of topping is required to keep the vine within certain limits necessary for carrying on the vineyard work, more especially when the vines are trained low, on the bush-system already described.

Bearing vines, low on the ground, require more topping than old vines with a high stem, as one of the objects of topping, in

the case of low vines, is to make the shoots stand up and keep the grapes off the ground.

In the case of bearing vines, the object is not so much wood growth as the production of fruit, and a judicious topping causes the sap, which would otherwise have passed on to the end of the shoot, to divert into the bunches of grapes, which are thereby noticeably developed.

Topping should commence shortly after the flowering period of the grapes, when the shoots are about eighteen inches long, and is then best performed with a long-bladed sharp knife. Later in the season, when the shoots become woody, a sickle can be used.

In wet years, heavier topping is required towards the close of the growing period than otherwise, the object being to let the grapes get the maximum benefit of the sun's heat for the double purpose of ripening them and of checking the spread of oïdium; but the grapes should, nevertheless, in such seasons also be sufficiently shaded by the leaves to prevent the rays of the sun from falling on them directly, both for the purpose of preventing them from being directly damaged through getting sun-scorched, or indirectly (in case of wine grapes not intended for the production of sweet wines) through the constituents of the berries undergoing chemical changes which unfavourably affect the quality of the resulting wine.

Suckering.

Suckering consists in the removal of such shoots as bear no fruit and are not required for the future shaping of the vine. With certain systems of training the vine, *e.g.*, on poles or trellises, this work can be undertaken with advantage, as the removal of a portion of the shoots will strengthen the remainder considerably; but in the case of bush-trained vines suckering is very seldom systematically practised except in regard to the removal of "watershoots," a term applied to such suckers as grow out of the main stem either from below the surface of the ground or close to the ground.

In districts infected with the calandra insect, the suckers are purposely left on the vines to serve gradually, as required, for the purpose of making leaf balls, which are placed in the forks of the stems and in which the insects take shelter and are destroyed by burning.

There are, besides, two reasons why suckering, which in most European works on viticulture is considered an important and necessary operation, is not systematically practised at the Cape.

Firstly, our grapes require more shade in this sunny climate, a requirement to which the leaves of the non-bearing shoots greatly contribute; and secondly, the non-bearing shoots assist the others in standing up against our heavy wind-storms; if only the bearing shoots are left right from the start, they shoot up very rapidly, and, through being situated comparatively far apart, have no mutual resistance against the wind, in consequence of which they are easily blown off.

Irrigation.

On the great majority of soils of the Western Province, in districts with a rainfall of over twenty inches, vineyard irrigation is unnecessary, and cultivation, which means the preservation of the natural moisture of the land, should take its place. In districts with a rainfall of under twenty inches there are many situations in which irrigation is equally unnecessary; the character of the land and the growth of the vines will decide the question in such districts and also in the exceptional cases of doubt in districts with a higher rainfall.

The irrigation of vineyards, it must be remembered, does not quite bear the same relation to the crop as the irrigation of fruit orchards. In the case of orchards the object generally is to get the best sized fruit irrespective of quality, whereas in the case of grapes intended for wine-making, quality should be the first consideration; and the irrigation of a vineyard that does not really require more moisture for the development of the grapes is not likely to do the quality of the wine any good. In many instances vineyards are irrigated where it is really not necessary, and in not a few cases where irrigation is beneficial it is altogether overdone.

The result of over-irrigation, especially where there is a clay subsoil, is that the lower roots of the vine are checked in their development through excessive moisture, and the growth of the upper roots is encouraged. If such a system of irrigation be continued for a number of years, and the irrigation water should happen to fail in a dry season, it will be attended with disastrous

results to that year's crop, as the greater portion will be sure to wither away owing to the bottom roots not having struck down to a sufficient depth to gather the necessary moisture to keep the vine in a healthy condition.

In districts not yet infected with phylloxera this fact has another significance, namely, that over-irrigated vines, through having their root system near the surface, will be much sooner destroyed by the pest than unirrigated or sparingly irrigated vines with a deep root system.

In cases where irrigation has to be resorted to, two or three soaking irrigations, when the summer is well advanced, with intervals of about a month, are ample, provided the surface is well stirred up either by a horse-hoe, hand-hoe or spade a couple of days after the irrigation, as soon as the crust is dry enough for the work. If the irrigation be not followed up by such cultivation the surface will get baked and crack open, and a great part of the moisture of the land will escape through the fissures thus formed.

Draining.

The advantages of draining are manifold, but only one will be mentioned, namely, that air in the soil is known to have quite as much to do with successful plant growth as moisture, and no system of manuring will render a soil fertile that is waterlogged and has no room for air in it.

The systematic draining of a vineyard wherever the nature of the land requires it, is as important an operation as cultivation and manuring. Vine roots penetrate to a considerable depth, and drains, to be effective, should be at least four feet deep.

One of the difficulties connected with open drains is that the sides will in many cases keep falling in and obstruct the passage of the water. In vine cuttings we have an excellent material ready to hand for constructing covered drains, and if well put down they will keep a drain in good working order for quite three years, by which time the drain will likely become choked up and require refilling. Such drains are made in the following way: after the trench has been dug out with a long draining tool, broad on top and narrowing down to about four inches, a layer of vine cuttings about two feet thick is tramped down in the

bottom; a layer of grass or straw is put on the top of the cuttings to prevent the ground from sifting through, and the drain is covered up.

Such drains are easily and expeditiously constructed, and a series of them with outflows in the main storm-water furrows will drain wet land pretty thoroughly.

CHAPTER V.

WHEAT AND RUST.

The latest reliable statistics of wheat production in this Colony are for 1898. In that year the total production was 740,249 muids or bags of three bushels, equivalent to 2,220,747 bushels. The principal wheat producing districts lie in the extreme south-western corner. These are Clanwilliam, Piquetberg, Malmesbury, Cape, Paarl, Caledon and Bredasdorp. There are isolated divisions, such as Calvinia, Namaqualand, Queenstown and Albert which produce more wheat than, for instance, Clanwilliam, Cape or Bredasdorp, but taken as a group, the seven divisions named may be regarded as the principal producers. In 1898 they yielded 949,062 bushels, or nearly one-half of the total production, while their area is only one-twenty-fourth of that of the Colony. It must be said, however, that this is due mainly to the weight thrown into the scale by Malmesbury, which alone produced in the year mentioned 506,169 bushels, or nearly one-fourth of the total production, while its area is only one-twentieth of that of the Colony. It yields as much as the next five largest producing divisions, namely, Piquetberg, 134,611 bushels ; Caledon, 114,972 bushels ; Calvinia, 102,186 bushels ; Paarl, 73,485 bushels ; Namaqualand, 70,461 bushels ; while its area is one-fifteenth of theirs.

The second largest producing group is situated in the extreme east, adjoining the Native territories, and comprises the divisions of Queenstown, Tarka, Cradock, Albert, Aliwal North, Herschel, Barkly East and Wodehouse. They produced jointly 325,419 bushels in 1898, or about two-thirteenths of the total production of the Colony. Of these Albert and Queenstown produced nearly twice as much as the next largest producer of the group Wodehouse, while Barkly East and Cradock produced least.

The combined area of this group is 13,352 square miles, or one-twentieth part of the Colony.

The following tabular statement will show more closely the relative productions for the year 1898 of the districts which yield most :—

Area of the Colony... ... ... 276,995 square miles.
Production of Colony ... ... 2,220,747 bushels.
Average production per square mile 8 bushels.

	Division.	Divisional Production (bushels).	Divisional Production proportionate to that of Colony.	Divisional Area (square miles).	Divisional Area proportionate to that of Colony.	Divisional Production per square mile (bushels).
			(Approx.)		(Approx.)	
Group 1.	Malmesbury...	506,169	$\frac{2}{3}$	2,329	$\frac{1}{120}$	217
	Piquetberg ...	134,511	$\frac{1}{17}$	1,733	$\frac{1}{160}$	77
	Caledon ...	114,972	$\frac{1}{19}$	1,772	$\frac{1}{156}$	64
	Paarl... ...	73,485	$\frac{1}{30}$	610	$\frac{1}{454}$	120
	Cape	43,536	$\frac{1}{51}$	663	$\frac{1}{417}$	66
	Clanwilliam...	41,289	$\frac{1}{52}$	2,926	$\frac{1}{94}$	14
	Bredasdorp ...	35,100	$\frac{1}{63}$	1,577	$\frac{1}{176}$	22
Group 2.	Albert ...	63,159	$\frac{1}{35}$	1,958	$\frac{1}{141}$	32
	Queenstown...	62,064	$\frac{1}{36}$	1,749	$\frac{1}{159}$	36
	Wodehouse ...	37,251	$\frac{1}{59}$	1,635	$\frac{1}{174}$	24
	Tarka ...	37,011	$\frac{1}{60}$	1,427	$\frac{1}{194}$	26
	Aliwal North	36,354	$\frac{1}{61}$	1,330	$\frac{1}{208}$	27
	Barkley East	35,328	$\frac{1}{62}$	1,564	$\frac{1}{177}$	23
	Cradock ...	34,185	$\frac{1}{64}$	3,066	$\frac{1}{91}$	11
	Herschel ...	32,067	$\frac{1}{69}$	684	$\frac{1}{405}$	47
	Calvinia ...	102,186	$\frac{1}{21}$	13,894	$\frac{1}{20}$	7
	Namaqualand	70,461	$\frac{1}{31}$	17,556	$\frac{1}{16}$	4
	Middleburg ...	53,781	$\frac{1}{41}$	2,222	$\frac{1}{124}$	24
	Uniondale ...	45,621	$\frac{1}{48}$	1,690	$\frac{1}{169}$	27
	Oudtshoorn ...	39,387	$\frac{1}{56}$	1,653	$\frac{1}{167}$	24
	Ceres... ...	39,273	$\frac{1}{57}$	3,871	$\frac{1}{72}$	10
	Alexandria ...	36,000 (approx.)	$\frac{1}{62}$	947	$\frac{1}{292}$	38
	Remainder of Colony.	547,457	$\frac{1}{4}$	210,137	$\frac{7}{9}$	$2\frac{1}{2}$

The relative productions of the divisions mentioned will be found to vary in different seasons according to climate and other conditions. For example, the divisions in group 1 may have a good season, while the divisions in group 2 are suffering from drought; or the districts in group 1 may be suffering from rust, while those in group 2 are enjoying a favourable season. Similarly there may be drought in Calvinia and not

in Middleburg, or rust in Oudtshoorn and a good season in Namaqualand. But as regards the groups the relative productiveness may be taken as unvarying, as rust, if it appears in one division in group 1, is likely to show itself in the remaining divisions of the same group as well, though probably with slightly varied effect. Similarly as regards drought in the districts of group 2. Clanwilliam would be an exception however, in some years, as most of its wheat is grown along that portion of the Oliphants river which receives the waters of the Doorn river, and the latter rises and flows for nearly its whole course through districts which are subject to prolonged droughts ; so that drought in what is known as the Gouph may affect the production of Clanwilliam, while the production of the remaining divisions of group 1 will not be similarly affected.

Rust has been referred to only as regards group 1, and drought only as regards group 2, because these are the prevailing drawbacks of the respective localities.

The average production of wheat from sown seed in the Colony may be taken as tenfold. In the Malmesbury division also ten from one is reckoned a fair return. There are, indeed, localities which produce 100 and more from one, but they are few. This is the case as regards most of the wheat raised in Clanwilliam, Calvinia, Fraserburg and Kenhardt divisions, and it will therefore be understood that the area under wheat cultivation in these divisions is very small. The production of Calvinia per square mile has been given in the above table as seven bushels. This shows that although the return in that division is so great, a very large area is only fit for grazing ; in fact the arable land is comparatively very small. The reason for such productiveness in small parts of the division is due to this: the Zak and Fish rivers, like the Doorn river, carry down the rich silt of the Gouph and part of the Western Karroo. They have shallow beds and easily overflow, which, except in times of drought, happens regularly once, twice or even three times a year. The silt in the overflow water is deposited on the banks, so that whenever the overflow takes place the wheat lands practically receive a virgin coating, requiring no manure. The sowing is done in this silt and the result is a return of 100 from one. It must not be understood, however, that this is the case along the whole length of the banks of these rivers. The

topography of the country is against cultivation except at a few spots, and there industry assists the rivers in flooding large tracts and in depositing as much silt as possible.

RUST.

This disease is principally found in the south-western districts, and has been the enemy of wheat for many decades. Oats it did not appreciably affect till 1899 ; nor have other cereals been much subject to it. The advisability of a change of seed was recognised about twelve years ago, and the Government then imported a small quantity of Medeah (Golden Ball) and other hard varieties of wheat for experiment. The report on these were favourable, but little headway was made in the direction desired. Since then quantities of Rietti, Medeah and Red Egyptian wheats, and of Texas Rust-resisting, River Plate and Algerian oats have been imported by the Government and distributed among farmers for trial-sowing, as the experience of other countries has shown them to be rust-resisting. Beyond these trials no experiments have been undertaken to discover means of combating the fungus itself or of establishing the resisting properties of the many varieties of wheat and oats; and as scientific experiments in Australia, the United States of America and Sweden have failed to discover practicable means for preventing infection or of destroying the parasite the Cape Government has merely directed its attention to importing such varieties of wheat and oats as have been found to withstand the disease best in other countries. It is therefore necessary in treating of rust in this country to fall back on the experience of local farmers.

Experiments made by the United States Government showed that the fungus is able not only to live through the winter, but also to grow all through that season in latitudes below 40 degrees. It should be possible therefore for the disease to live in this country through the winter. The inference is that if it has appeared in a particular locality in one season, it will reappear in that locality the following season if cereals be again sown. It is, however, a common experience in this country that parts which are badly infected in one season are free from rust the next season, and *vice versâ*. The adjoining divisions of Malmesbury

and Piquetberg frequently exemplify this capricious tendency. Hence it is commonly said by farmers that "the disease is in the air." Wet winters are taken as prophetic of the absence of rust in the spring, whereas dry seasons, generally accompanied by mists, are held to be the harbingers of rust. This impression has probably gained credence through the fact that the fungus cannot in wet times make headway until late in the season, when cereals are far advanced, and that while it may then appear in the leaf and stalk, the ear may be unaffected. So, on the contrary, in a dry winter with plenty of warmth, the parasite would develop early and the grain crops suffer heavily. This seems to be borne out by the experience of farmers in the south-west, showing that a heavy rainfall in September keeps down the rust.

Rotation of crops is rarely tried, nor was it until recent years that a change of seed was ventured upon. It has long, however, been recognised that to sow early and reap accordingly, or to sow varieties that ripen early, was the best way of fighting the disease; in other words, since it could not be beaten, it was best to elude it. Hence the preference for Du Toit's and Een-been wheat, which are early varieties. As has been said, however, various imported kinds are now being tried to see whether they possess African rust-resisting properties or not. Of these Rietti is generally preferred among wheats, and Medeah occasionally; and the Algerian variety among oats has yielded clean and excellent crops.

CHAPTER VI.

LUCERNE GROWING.

(*By* E. *and* O. Evans.)

The prosperity of several districts in countries such as California, Hungary, the North of Italy, and South of France, depends generally upon their lucerne fields. Cattle, horses, ostriches, sheep, goats, pigs, rabbits, fowls, turkeys, geese, ducks, and game of all kinds thrive upon it. It grows best in hot countries where the climate is dry, and where it can be periodically flooded. Sub-surface water will, if constantly present, kill it outright.

There is no portion of the Karroo too cold to grow lucerne well. Along the coast-belts it will produce food for stock all the year round, especially if irrigated during the winter. It can be grown better and with less trouble upon the Karroo soils than upon the black soils of coast and grass districts. In the black soils the growth of weeds and grasses militates against the monopoly by the lucerne. In the reddish and yellow soils of the Karroo, on the other hand, there is comparatively very little weed and grass growth. This is a strong point in favour of Karroo soils for lucerne growing; moreover, lucerne is a great lime-feeder, and most Karroo soils are well supplied with lime, whereas black soils are deficient. Lucerne glories in a subsoil with lime in its composition. The deeper the soil in all cases the better, but a depth of three or four feet even will grow very good crops for many years. On shallow soils, however, manuring may have to be resorted to after a few years. Rock near the surface is nearly as bad as constant water near the surface. Some of the best lucerne soil in the Karroo lies along the Sundays River and the Great Fish River, especially in the lower districts near the sea.

B
D
C
A
A. Plant in Flower.
B. Crown of root (rhizome).
C. Dodder.
D. Dodder flower (magnified).
L.R.B

LUCERNE.

Preparation and Sowing.

The ground ought to be ploughed as deeply and brought to as fine a tilth as possible with harrows, to make an even seed bed. The ground should have a gentle fall insuring sufficient penetration, and at the same time no unnecessary wash and lodgment of water. The yield on very sloping ground is almost *nil*, compared to that on ground with just a very gentle slope. In fact, on very sloping ground, it would pay better to grow grain. But on the ground of the right tilt, lucerne pays five times better than growing wheat on the same ground. Where grasses are troublesome, the ground should be extra well ploughed and harrowed. Manuring land for lucerne is seldom or never practised in Oudtshoorn, which is at present the greatest centre of lucerne culture in South Africa. New ground especially requires no manure. The "ridging system" is best for flooding lucerne. The ridges can be made with an ordinary 75· Eagle plough, at the time that the ground is ploughed and prepared for sowing. A single-breasted J plough would be even better than a 75· plough for making the ridges. Some people make the ridges with beams bolted together in the form of a triangle; but we prefer the plough, as the ridges made with a plough are more substantial and durable.

The quantity of seed sown per acre varies very much in different countries and different localities. In France, for instance, as much as 30 lbs. of seed is sown to the acre. One acre measures exactly 4,840 superficial square yards; roughly about 70 yards by 70 yards. From 30 lbs. an acre in France, we find as little as 2 to 3 lbs. per acre sown by some Australian farmers in laying down sheep pastures. A Colonial farmer in the Graaff Reinet district, uses about 8 lbs. to the acre. But it is safer to allow a good margin for loss of young plants through cut-worm, earth-fly, drought, and other thinning-out causes, and the following quantities per acre *broadcast* are a safe standard, viz.: 15 lbs. to the acre in freshly-broken virgin soil, and 20 lbs. on old grain lands, where plant food is scarce and weeds are plentiful. Lucerne is far better sown broadcast than in drills or rows. If drilled on a large scale, the inevitable weeding would entail constant and heavy expense, even if done by horse-hoe. Where rank strong-rooted grasses are

troublesome, the seed should be sown extra thick (say 25 lbs. to the acre), to enable the young lucerne to smother the grass in the struggle for mastery. The seed should not be covered too deeply under the soil. An ordinary medium heavy bush-harrow will cover the seed quite deep enough. Indeed, if sown during a rainy month it needs no covering with the harrows at all, but will germinate and root excellently, simply lying uncovered upon the surface. Some people prefer to sow lucerne along with wheat, barley, or oats, reaping the grain crop when ripe, and leaving the lucerne then in sole possession of the ground. If a "non-stooling" variety of wheat like Italian (Blauwkoorn) or Defiance (Kaalkop) is sown, it is certainly beneficial to the young lucerne, especially if the ground is an old weedy grain-field. The wheat checks the growth of the numerous tap-rooted weeds, and thus gives the young lucerne crop a better chance for rooting and establishing itself. The sowing of lucerne with either barley or oats is not recommended. They "stool" too much, especially oats. English oats are nearly as bad as grass for choking out a field of young lucerne. Lucerne germinates, and in its younger stages thrives, far better under successive showers of rain, followed by dewy nights, than under the most highly-approved methods of scientific artificial irrigation. The usual method of first watering the ground, then ploughing it, and sowing the seed in this moist ploughed ground to germinate with only the moisture in the ground, is not good. The surface of ploughed ground—unless at once rolled with a heavy roller—dries out so rapidly that the delicate seedlings are very apt to wither and die for want of surface moisture. In fact, a large percentage of seed sown in this way is very apt to make a false start at germination and then die, having only just burst the outer shell of the seed when the surface moisture has given up. Hence, sowing in the rainy season is strongly recommended. It is far better to sow lucerne seed in *quite dry* ploughed ground, just before the rainy season, and leave it thus for the rains to bring up when they come, than to sow it in the ordinary way in damp ploughed ground, and trust to irrigation to bring it up and help it through the critical first two months. Lucerne may be sown all the year round, of course, but for the reason above stated, only the natural seasons for sowing it are recommended, even where there is an unlimited supply of water handy for irrigation.

Seed of one or two years old is, as a rule, better than fresh seed. The latter has more hard grains in it than old seed, and consequently a larger percentage of the old seed will germinate. The bulk of the seed grown in this Colony is grown at Oudtshoorn, and is of excellent quality when got from reliable growers or seedsmen. Oudtshoorn seed of excellent quality, and at a price considerably lower than the English or imported sort, can be got in large quantities from Mr. W. Thomas, of Welbedacht, Oudtshoorn. Mr. Thomas guarantees what he sells to be free from "dodder" seed. Good, reliable English seed can be got for 1*s.* per lb., in quantities of 50 to 1,000 lbs., from Messrs. Gingell, Ayliff & Co., Port Elizabeth. The ordinary seedsmen charge exorbitant prices for lucerne seed in small quantities. Intending growers of lucerne should buy reliable seed in quantity from reliable sellers. It is far the cheapest in the end.

Dodder.

Cuscuta epithymum, or "dodder," is the worst enemy the lucerne grower has to contend with. Dodder, in appearance, is a stringy seaweed-looking mass covering the lucerne infested. It is a parasitic plant, and clings to the lucerne, sucking the life completely out of it, and spreading like a yellow sheet of fire, until the entire field is utterly and hopelessly destroyed. The germination of dodder is effected in the earth; the slender and simple radicle descends therein and if it finds no lucerne plant near it, it dies. If it finds one, it surrounds the stem and from the points of contact proceed hollow tubercles, or suckers, which suck the juice of the plant attacked. The dodder root in the soil then dies, and the dodder lives from that time by its suckers only. Dodder destroys lucerne either by depriving the plants of their nourishment or by strangling them. It is difficult to guard against the enemy on account of the rapidity of its vegetation, the facility with which it passes from plant to plant, the abundance of its seeds, and the double power which it possesses of germinating either in the earth or in the capsule. The seed resembles that of lucerne, but is considerably smaller. Passing lucerne seed through a sieve having a mesh that will allow only the dodder and smaller lucerne seeds to go through, is said to remove dodder seed from lucerne seed. But since only one

dodder seed will spread to a dangerous extent before its presence is discovered, the greatest care is recommended in the purchase of lucerne seed, and seed that is known to have had dodder in it even if passed through ten thousand sieves should not be used. Since dodder seed is difficult of detection, at any rate to the inexperienced, the buyer is entirely in the hands of the grower or seller of the seed. If wise, the grower will not buy small quantities of seed from shopkeepers who do not deal largely in seeds, and have therefore no seed reputation to lose. Careful watch should be kept over all young fields of lucerne so as to detect the first appearance of dodder before it has spread; since *one single* plant will spread over the largest field of lucerne in a very short time if not checked. Dodder in a lucerne field is as pleasant as fire in a haystack.

How to Destroy Dodder.

When the cultivation of Lucerne was first taken up on a large scale experts protested against the folly of saving sixpence or so per pound instead of procuring the very best of the twice-sifted Provence seed from some house having a world-wide reputation to maintain, such, for instance, as that of Vilmorin-Andrieux, of Paris. It was, of course, pointed out that other seed would be dear at a gift, and would inevitably introduce dodder. But then nobody knew what dodder was, had never seen it or heard of it, so they saved their little sixpence and chanced it. Now they know better, and are at last possessed of that bitter wisdom which is distilled from the experience of the unwise.

There is no method of extirpating dodder other than the use of sulphate of iron, and the heroic system of burning. Burning is the most effective, but it must be considered that there is *burning* and burning; the one half-hearted, imperfect, and unwilling, the other observant, thorough, and determined. It is no good burning in such a way that dodder seed may, after all, be left lying on the ground ready for germination, or so that the parasited stubs of the lucerne within the circle of the smouldering heap may escape calcination. Every scrap of lucerne, weeds and dodder must be burnt into literal ashes. Dodder burning is not a ceremony done for the sake of appearances, like smelling one's top-hat when one goes into church. It is a real tussle

with a real enemy, and must be done in earnest. Cut the diseased patch out with a sickle, passing outwards from the centre till it is all cut and pitched in a heap like a haycock. Let it dry, and burn it when it will just fire without blazing. Keep the patch free for the season, and dress it repeatedly with dry sulphate of iron, *i.e.*, green copperas which has been dried to a whitish powder in the slack oven. You may mix one pound, with five of dry earth and be liberal with the mixture.

But prevention is better than cure, so it is better to begin with clean seed, and that is just what few people do. Let the growers combine and *refuse to purchase any local seed* which is not guaranteed free from dodder, and passed through a double set of siftings through sieves which will only just retain the lucerne, and will let the dodder through. The sellers would be compelled to set up an installation of sieves, and use it to produce the clean article as demanded. *Caveat emptor* is a proverb as old as the hills, and the meaning is:—Let the buyer take care he is not humbugged and stuck with doddery lucerne.

Irrigation of Lucerne Fields.

Lucerne in its very young stages should not be irrigated. The best germination and stand of lucerne is always found on fields which have been brought up by rain. It is injurious to flood it until it has attained *at least a couple of inches growth* above the ground. Lucerne in its early stages is as delicate as in its matured state it is hardy. Frost will quite destroy a field in its second, third, or fourth leaf, if it happens to be standing in loose dry ground. Frost, however, has little or no effect upon the very youngest lucerne if the surface soil is quite moist. To irrigate young lucerne is bad, but to save it from destruction by frost, when the surface is very dry, it has to be irrigated to moisten the surface. Therefore, to avoid this dilemma sow in the rainy season at a time when the frost is still far away. There is no prescribed rule as to the periods between each watering. Much depends upon the porosity and absorptive power of the soil. For instance, in sandy soils one application of water will yield a growth of green food for a considerably longer time after it than one watering would on a tight clay soil. Generally speaking, the more often it is watered the more it will yield. In Oudtshoorn many of the

lucerne fields are flooded about once in two months, and that only *if there is sufficient water to do this.* In Karroo soil of a sandy alluvial nature, such as is found along the banks of the Great Fish and Sundays Rivers, we should say that even only four waterings a year should be sufficient to produce constant growth, yielding an enormous quantity of green fodder, probably twelve to fifteen tons per acre per year, and it may be much more. Lucerne will yield good crops of fodder even when irrigated with quite brack water for years in succession, though, of course, the fresher the water the better. In applying flood-water to lucerne it is advisable to let the very muddy water pass unused for about five or six hours after the first rush down the river. Flood-water, if very muddy, should be applied principally to those fields that have the greatest slope. On fields of gentle gradient this deposit of fine mud does not so readily take place as on quite level ground and hollows. By running the most muddy of flood-water into a drain, where it is brought to a comparative rest for a few hours, it will have precipitated quite 50 per cent. of the fine silt, and will be safe to use on even dead level ground. Good will result to lucerne that has been irrigated with muddy flood-water if the surface is harrowed or scarified immediately it is dry enough. The frequent flooding of lucerne fields during the winter months where water is available is recommended. If lucerne is freely irrigated during the winter, the moisture strikes deep and the crop will give a greater yield during the summer than if winter irrigation had not been given. On deep alluvial soil, lucerne that has been freely irrigated during the winter will continue to yield right up to midsummer without irrigation during the spring or early summer. There is no point of more importance in laying down permanent lucerne fields than that of seeing that all the furrows are in sound working order. Distributing and regulating gates should be substantially erected at every point where the laterals branch off from the mains. The great object, especially in the case of flood-water, is to make the greatest possible use of the water every hour that it runs, since it does not continue to run long.

The best way to ensure this is to construct *large main furrows* (fully six feet wide) from the weir to the river, to carry as large a quantity in as short a time as possible, and see that all

the furrows are in thorough repair for rapidly and economically distributing this large stream while it lasts. If the furrows are small, and not in proper repair, it is waste of time attempting to make any real use of flood-water. It is a mistake to suppose that only perennial streams, strong springs, or large dams will ensure profit in lucerne growing. For instance, one of the most valuable Oudtshoorn lucerne farms depends almost entirely upon flood-water for irrigating the lucerne. During a severe drought at Oudtshoorn the water furrows on this farm had not a drop of water in them for six months. There are also some valuable lucerne farms in the Graaff Reinet district and upon the Sundays River Estate entirely dependent upon flood-water after rains. The increased use of flood-water along the larger periodical Karroo rivers would cause them in time to become perennial streams.

How to Graze Lucerne.

Sometimes a young crop of lucerne will appear to be entirely mastered and smothered by weeds. Don't let this alarm you and don't plough it up as though it were a failure. Turn sheep or cattle into the field and leave them there until they appear to have smashed down and pulverised the weeds, lucerne and all. Leave the stock on this weedy field till in appearance it is literally bare ground. Then turn out the stock and apply the water, and you will find the lucerne showing up faster than the weeds. Repeat this treatment every time the weeds threaten the young lucerne, and the latter will soon gain the mastery, taking full possession of the ground. There are people who, not having understood this method of combating the weeds, have ploughed up young lucerne fields, thinking they were failures, when they might have developed into flourishing holdings. Running the mower over young weedy lucerne is, of course, the correct treatment. But when this cannot be done, the stocking plan above described answers the purpose nearly as well.

Stock should never be allowed to continuously graze lucerne. They should be removed from the paddocks as soon as the crop is eaten down to three or four inches above the ground, then apply the water to this paddock, turning the stock into the next plot ready for grazing, and so on in rotation.

Sheep and cattle turned on *short succulent* lucerne are apt to get hoven or "opblas." This rarely happens to stock upon lucerne near the flowering stage. Animals that are accustomed to eating this fodder should never be put into a field of short succulent lucerne straight from a dry Karroo or grass camp. Let them in by degrees. Sheep placed in lucerne paddocks to fatten, if left to run in the paddocks day and night, can usually be turned off fat in from three to four weeks from date of putting them into the paddocks. Cattle take a longer time. An Australian writer estimates one acre of lucerne will fatten eight to ten sheep. Since the plant can be grazed some six or seven times a year, one acre would thus produce feed enough to fatten sixty to seventy sheep per annum. In districts where "fever" amongst sheep is apt to occur it is advisable to choose the cool months for fattening merinos on lucerne. The hot months, when damp, are bad. Shedding sheep regularly at nights in fever season is said by many to be a preventive of fever. Sheep that are rapidly putting on fat on lucerne seem very liable to fever. Where ostriches are kept on lucerne it is usually better to place cattle, horses, or sheep on the field after the birds have stripped the leaves and tops, in order to feed down the stubble to about four or five inches above the ground. This practice has the advantage of being a strong check upon weed growth. The weeds are left standing by ostriches, and are pounded down by the stock while clearing the lucerne stubble. This process is a very fair substitute for mowing the fields for stubble and weeds. It is, however, always advisable to leave the late growth of lucerne as long as possible for winter use, and to protect the crowns of the plants from severe frosts. If this is done it is astonishing what a quantity of valuable green fodder is yielded by lucerne fields during the winter and early spring. In this way, too, the soil is shaded during the winter, and the winter irrigation moisture penetrates and is better retained for the ensuing summer.

Making Lucerne Hay.

To make the best hay the field should be cut when the first flowers commence to appear. If allowed to go until in full bloom, or until after the plants have finished flowering, the stems become hard and woody and unfit to be eaten by stock.

During dry hot weather it is better to cut for hay-making in the afternoon. Let it lie in the swath until the leaves are thoroughly wilted, and remove it from the windrows directly to the stack or barn. The stack is preferably made near to or upon the field where the crop is cut, because every time the hay is handled the leaves drop from the stalks. The less it is shifted about the better, since the leaves are the most palatable and nutritious part of the hay. The art of making good lucerne hay is to be acquired by practice rather than by following directions, as the quality depends upon putting it in stack when just sufficiently cured to keep without heating, and yet green enough for the leaves not to drop off. This happy mean can be acquired only as a result of practice. Those who intend to make this hay in any quantity are therefore recommended to see lucerne hay-making in operation.

Lucerne Growing in the Karroo.

The rainy season of the bulk of the Karroo comes at the wrong time of the year for the sowing and reaping of wheat. The opinion expressed by many progressive farmers in Australia is that "the man who grows wheat under irrigation is mad." Of course what is meant is, that crops such as potatoes, fruit trees, lucerne, vines, tobacco, &c., under irrigation on good soil will yield far greater returns per acre than wheat growing. These special crops, however, all require more care and skilled labour than cereal growing, hence there is often a preference for wheat, the lazy man's crop.

There is an antiquated idea among the Karroo farmers that when one has good ground under irrigation he must grow wheat to make his own bread, and save buying it. The fact that he would be able to purchase many bags of wheat by growing lucerne where he would only have raised one bag of wheat does not seem to weigh with this farmer. Good ground under irrigation in the Karroo is far too valuable to sow year after year with wheat, barley, oats, maize and pumpkins. The growing of cereals should be left to those parts of this Colony and neighbouring States where they can be grown wholesale upon the slopes and hillsides for miles and miles at a stretch, without artificial watering, and depending solely upon seasonable rainfall. Regions blessed with these natural features are naturally adapted

to cereal growing. These features are possessed by some of the coast districts of the Western Province—Malmesbury and Koeberg districts, for instance—and some of the coast districts of the Eastern Province, and also in the Orange River Colony. Instead of trying to coerce the Karroo into grain producing, it should be made to carry crops more suitable to its peculiarities of climate, soil, and rainfall. Lucerne is just one of those crops.

Cost of and Profit from Lucerne.

A leading Graaff Reinet grower, whose lucerne fields depend entirely upon periodical flood-water diverted from the Sundays River by means of a weir across that stream, says that, during a recent period of terrible drought in the Midlands, he made in six months (June to December) £1,300 from fattening hamels, and £700 from making butter—a total of £2,000 in six months from about 150 acres of lucerne. Deduct from this, say £100, six months' expenses of milking and tending the cows, and tending the hamels in the paddocks; and 2*s*. 6*d*. per acre on 150 acres for water leading during the six months, amounting to £18 15*s*., making a total for the six months of £118 15*s*. This will leave a credit balance of £1,881 5*s*. from 150 acres of lucerne in six months, being a clear profit of £12 10*s*. per acre in six months, or £25 per acre per annum during severe drought. This farmer in the one year made, from butter alone, £5 per month per acre, from one ten-acre field of lucerne under dairy cows, equal to £60 per acre per annum. He was also making £70 per month from butter in a drought, when, without lucerne, he would have been unable to make butter at all. Lucerne makes butter that fetches the highest market price, and yet so little is known of "the king of fodder plants" that many farmers have a hazy idea that it gives butter a peculiar and bitter flavour.

Grazing ostriches upon lucerne paddocks is equally as profitable as making butter or fattening sheep upon this crop. In Oudtshoorn, where there are some 25,000 acres of ground under lucerne, the standard or average capacity of the fields for ostriches is considered to be about five birds to the acre all the year round. Double this number could be run on lucerne during the summer, but to be on the safe side, the number is thus

limited. The natural Oudtshoorn grazing is worthless, and entire dependence is placed upon the lucerne fields for rearing the birds. The latest statistics show that there are 46,290 ostriches in Oudtshoorn, and all are dependent on lucerne. This represents about one-fifth of the total number of birds in the whole of the Colony. Selected birds will yield on lucerne at least £3 per plucking per bird, clear of marketing fees. As birds running on lucerne can be plucked regularly every eight months, without any damage to the wing, three pluckings can be got in two years, yielding a total of £9 per bird per two years. This is at the rate of £4 10*s*. per bird per annum. Since one acre of lucerne will carry five birds all the year round, and each bird will yield at least £4 10*s*. per annum, a return is shown of £22 10*s*. per acre per annum, less 5*s*. per acre expenses water leading, leaving a clear profit of £22 5*s*. per acre per annum from ostriches grazed on lucerne. This is many times as much as from wheat growing. Taking the making of lucerne hay as compared with wheat growing, it is seen that one acre of the fodder plant will yield from each cutting about $1\frac{1}{2}$ to $1\frac{3}{4}$ tons of cured hay, which means about eight tons of hay per acre per annum. To be well within the mark, only five tons of 2,000 lbs. each per annum may be taken. Lucerne hay sells in Port Elizabeth at from 4*s*. to 5*s*. per 100 lbs. At 4*s*. only, the five tons would realise £20. Deduct from this the expense of water leading at 5*s*. per acre, and expense of cutting and curing the five tons at 5*s*. per ton in stack. This would amount to £1 10*s*. expenses, which, deducted from £20 (amount realised from sale of hay), would leave a clear profit of £18 10*s*. per acre per annum from making lucerne hay. This is also many times more profit than is derived from wheat growing, and in weight it is about two or three times as much hay as is obtained from one acre of oats.

Value of Land under Lucerne.

Even in Victoria, where there are hundreds of thousands of acres of the most fertile grazing land, lucerne fields are found to be very valuable. At a recent auction sale of lucerne land at Bacchus Marsh, in Victoria, 9 acres brought £40 per acre; $7\frac{3}{4}$ acres adjoining were sold at £60 an acre; $9\frac{1}{2}$ acres at £38; 23 acres at £37; 40 acres at £30; 5 acres at £40; $4\frac{1}{2}$ acres at

£41 10*s.*; 5¾ acres at £37 10*s.*, and 17½ acres at £40 an acre, being an average for 122 acres of a little over £37 per acre. If lucerne land is found to be so valuable in this fertile portion of Victoria, how much more valuable ought it not to be in the arid Karroo, where it would be the means of saving hundreds of thousands of pounds worth of valuable stock during one severe drought.

The average value of ground under lucerne in Oudtshoorn, with a fair water supply, is about £50 per acre. Ground under lucerne on the Sundays River Estate has recently fetched at public auction £35 per acre. The water supply on this estate is periodical, being flood-water only. The water is diverted from Sundays River by means of several sneezewood weirs, about five feet high, across the river.

Colonial Experience.

Mr. Gavin, of Oudtshoorn, says:—"I may mention I was the first to farm with lucerne in these parts, having tried an imported quantity of seed in 1866, which cost landed 2*s.* 6*d.* per lb. I had made thousands of pounds sterling out of it before my neighbours took to it. Now it is an acknowledged fact that lucerne has been the making of Oudtshoorn. As an example, I may mention that on my farm here of about 210 acres, I have at present, in prime condition, 105 oxen, seventeen cows and calves, 10 horses, 550 ostriches, and a lot of slaughter sheep, and have already saved about twenty tons of lucerne hay for winter, with about ten acres under wheat and oats, and I could feed double the number of stock."

A Karroo farm in the Graaff Reinet district, owned by one of the leading farmers, was not worth more than £3,500 at the outside valuation before it was acquired by its present owner. Previously it was let at £90 per annum, and were it not for a small shop or store upon the premises even this rental could not have been paid by the tenant.

The new owner took over this unpromising farm amid the croakings of those who prophesied disaster. He set to and built a weir across the Sundays River at a cost of about £500. By means of this he can now flood from 150 to 200 acres of lucerne ground. Although before he built the weir and laid

down the lucerne fields the former tenant could not pay a rental of £90 per annum without the assistance of the small country shop, the present owner has been offered £800 a year rent for this same farm, and could let it at a rental of £1,000 a year if he wished. Capitalising the rental of £800 per annum at 5 per cent., the value of this farm to-day would be about £16,000, as against £3,500 before the weir and lucerne fields were in existence upon it. An Oudtshoorn lucerne farm (Zeekoegat), including a stock of about 1,500 ostriches, was recently sold for the sum of £40,000. The property is only 4,536 acres in extent, of which about 1,600 acres are arable.

There are immense fields of lucerne in Argentina, where the plant has taken the place of the innutritious scanty native grasses. In the Corowa district alone (New South Wales) there are about 21,000 acres. There are individual farmers in Australia having as much as 3,000, 4,000, and 7,000 acres of lucerne. A recent Australian writer remarks, "There will be a much larger average of lucerne laid down every year, as not only is the value so much appreciated, but many owners who have let their lands on the half-share system for wheat, have made a condition that the last year the land should be laid down in lucerne. I consider there is a great future before us in this plant."

Advantages of Lucerne Growing.

Locusts seldom touch lucerne, rust does not trouble it, hail may batter but cannot destroy it like cereals. If battered level with the ground by hail, in two weeks after there will be waving a field of magnificent fodder, five or ten tons to the acre. Drought that will kill lucerne, when once it is properly established, will kill the hardy Karroo itself. A field of lucerne, when once established, will last, like a fruit orchard, for years; and will require comparatively little yearly expense and attention to maintain it in a state of profitable production. In Oudtshoorn there are fields fifteen to twenty years old as good as and better than they were ten years ago. In Graaff Reinet there is a plot of lucerne said to be about seventy years old—probably self-sown from time to time. In New Mexico there are said to be fields which have been under this crop for more than a hundred years. The revenue or profit from lucerne fields is both far greater and

far more certain than that from cereal crops in the Karroo. To the Karroo stock farmer especially, lucerne is of inestimable value. It is one of the hardiest, yet heaviest yielding of fodder crops. If water cannot be given to lucerne fields for six or eight months no harm results. In the case of cereal crops they would be destroyed. When, after six or eight months' drought, water is again available for lucerne, this accommodating crop is ready to commence yielding enormous quantities of valuable fodder at once. With lucerne there are no yearly or half-yearly ploughings and sowings. With the small area of fifty acres of lucerne at his command, no Karroo farmer need lose a single head of stock in the severest drought. With a mower and a horse-rake he can cut and gather from his fifty acres, during one year, fully 250 tons of the most nutritious fodder for feeding his stock during droughts. One ton of lucerne hay would often be the means of saving £100 worth of stock in a drought, and this one ton would only cost 5*s*. to cut, cure and stack! £100 return for a 5*s*. investment is, in mining phraseology, a payable proposition.

Lucerne hay does not deteriorate if not used at once. It is not eaten and destroyed by mice and rats, as is the case with oat hay. The nutritive value of lucerne hay is, besides, much higher than that of oat hay. There is a curious notion among most Karroo farmers that lucerne hay is "no good alone" for feeding horses at hard work—a fancy that there must be oat hay, barley, or mealies added to the lucerne hay to give "substance."

On this point we quote the following remarks recently appearing in an American agricultural paper, the *Louisiana Planter*:— "Lucerne hay is one of the richest foods for stock; it takes the place, in the farm dietary, of wheat, bran, cottonseed, meal, &c. It is suitable alone for young growing animals and horses at heavy work." The high nutritive value of lucerne itself has been clearly demonstrated at the well-known scientific experimental fields at Rothamsted in England, where over a period of six years lucerne yielded an average of about 153 lbs. of nitrogen per acre per annum; whereas, over a period of eight years, vetches gave an average of only 84 lbs., Bokhara clover only 70 lbs., and red clover only 14 lbs. per acre per annum, as against 153 lbs. per acre from lucerne.

Resting the Veld.

And, lastly, special attention is drawn to this very important advantage of lucerne growing to the Karroo farmer. It enables him to relieve and rest portions of his stock-tramped veld by grazing most or all of his stock upon his lucerne fields during the growing and rainy seasons, and thus allow the useful grasses and bushes to grow out and seed for the much-needed improvement and renewal of his pasturage.

He is thus enabled to put into practice the highly beneficial "paddocking system" of grazing pasture, as practised in Australia and elsewhere. This system of alternate rest and use has been found to quadruple the carrying capacity of pastures. Thus does lucerne-growing not alone yield in itself a far better yearly return per acre than cereal-growing, but it is also the means of bringing about a steadily increased stock-carrying capacity of the whole farm. The initial outlay required for properly laying down permanent lucerne fields of any extent is considerably heavier than that required for ordinary cereal growing. As in the case of fruit orchards, the lucerne grower who has just started must be prepared to wait a year or two for a return upon his outlay. Lucerne fields yield very little the first year, and not much the second. From the second year onward the plant becomes profitable, although it is said not to be fully matured until about the fifth year. Most Karroo farmers cannot afford to wait for a year or two for a return upon outlay, and prefer to continue ploughing for cereals year after year, even if five out of ten years they are only feeding locusts and rust spores. Yet the advantages of lucerne growing are of more importance to the farmer of limited capital than to the well-to-do farmer.

CHAPTER VII.

IRRIGATION IN THE COLONY.

The geological formation plays a most important part in an irrigation scheme as, unless a sanitary base exists, stagnant waters and sourness occur, so that only inferior forms of vegetation (if we except maize, rice, &c.) can be grown for long periods with success. Suitable land exists alongside every permanent body of water in South Africa. Soil to serve the purpose of irrigation must be free from strong mineral salts; of a good composite character; naturally well drained, or admitting of effective and inexpensive artificial drainage; must be close enough to transport water in light channels or furrows; must not form true cement, or be deficient in lime, unless this element is near and cheap enough to be artificially supplied. Igneous rocks or deep close clays do not form so good a base as do calcareous, slate, sandstone, or other sedimentary rocks. Organic rocks in a state of decomposition invariably form an appropriate foundation for and give permanence to irrigable areas. Dead levels of any extent cannot be successfully irrigated. Apart from the cultivation of coarse fodder crops, rice, maize, and some inferior pulse, peaty lands are unsuitable, so are extremely heavy and extremely light soils. The best soils are those which absorb and rid themselves promptly of all free water by efficient drainage and remain perfectly aerated, sweet and warm. Irrigation soon exhausts the soil, and intense croppings have a like tendency; to avoid this, a locality, situation and method of cropping should be decided upon which will tend to preserve the soil complete and active. Irrigation engineers have always maintained that the cost of handling water depends to some extent on the cost of labour. The work that is being done in Egypt promises to be the most effective of our time, as the handling of the water and the crops will be no new thing to those interested. This is a most important point. The

distribution of water and handling of irrigable crops is a trade which must be known not only by engineers and expert agriculturists, but to whole communities of common toilers, before success may be hoped for. It is easy, therefore, to prophesy that with the whole farming community on the Cape veld practically conversant with the distribution of water and the handling of irrigable crops, even private enterprise might venture on the lines pursued by the Egyptian Government and meet with success. There certainly does not appear to be any reason why the Cape Government should not succeed.

The new settler will note that a deal of skill and judgment are required to irrigate successfully. The ordinary Englishman knows nothing about the process, and he will probably have to pick up a good deal from his Cape *confrère*. He may take encouragement from this, for there is no prouder man than the Cape farmer when he is imparting information to the seeker after truth. The writer speaks experimentally upon this point, for in his extensive journeyings throughout the Colony during the most critical political periods, he never found any farmer wishful to withhold information on his methods of culture. Failing experimental knowledge, the tyro has to consider the degree of skill any group of plants will demand, and ensure a right system of irrigating and cultivating :

1. The irrigation of dairy crops, fodders, roots and vegetables, calls for the least skilled labour.

2. Cereals call for a little more skill.

3. The irrigation of sugar-producing plants, as beet and cane, calls for special knowledge of those subjects.

4. The irrigation of fruit trees and vines—the latter for wine, for table fruit, or for drying, is the most difficult of all.

The most successful schemes of California are those where water is locked or diverted at considerable altitudes, and brought as required to the fields. Pumping and complicated methods of supply not only run up the first cost, but impose such a regular strain as to leave no possible chance of cheap water or production. Where power and irrigation water can both be obtained by gravitation, there is a good prospect of success. The more compact the area and intense the system, the more profitable. Patchy land should never be selected unless the water is naturally in touch with the favourable spots.

It is almost impossible to state in uniform figures how much may be spent in supplying each acre with water. Contiguity to towns or markets, quality and degree of permanence in the soil, and class and value of crops to be grown, justify more or less expenditure. £50 per acre would not be too much in some circumstances, whilst £5 might prove too costly in others.

IRRIGATION LOANS.

Loans of public money are granted to landowners for carrying out irrigation works upon approved plans and specifications. The Government bear all costs of inspection and examination of the scheme, and will also, if desired, furnish designs free of charge. The loans are secured by mortgage upon the land on and in respect to which the works are to be constructed. Forty years is the longest period for which the money can be borrowed. Repayment of the loan, with interest at 3½ per cent. per annum, commencing six months after the date of completion of the works, is made by means of half-yearly moieties. After payment of all these moieties, which vary with the term of the loan, the recipient is relieved from further liability. The *annual* sum required to repay a loan of £100 within ten years is (expressed approximately in currency) £11 18*s*. 10*d*.; within fifteen years, £8 12*s*. 7*d*.; within twenty-five years, £6 0*s*. 9*d*.; within forty years, £4 13*s*. 4*d*.

THE STARTING OF AN IRRIGATION FARM.

(*By* Frederick Frank.)

Choice of Land.

It is not easy to choose land when heavily bushed, as so little can be seen of its levelness. On the other hand, the land most heavily bushed is usually the best, while levelling is the most expensive part of the work in getting land ready for irrigation. Dig several holes in different parts to find the depth of soil, and go carefully over the whole, looking out for stone ridges. The more road frontage the better, and the nearer the intake the better the water supply. Don't buy right out, but rent with option of purchase; then, if a mistake is made, the experience is less expensive.

Clearing, Fencing and Levelling.

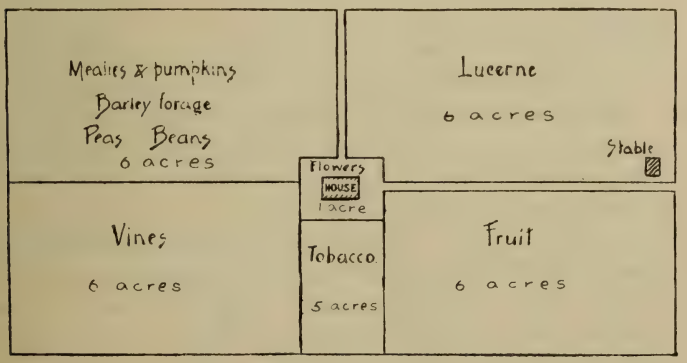
The first operation is to clear the land, and this should not be done in small patches, but the whole should be cleared (except round the site of the dwelling-house) before any other work is commenced.

A ring fence should be erected, and the best is the cheapest. Buy good poles and No. 5 galvanised wire, and double lace the wire.

The small leading furrows should be made from the main furrow or canal; the proper direction and position of these will be found with the level.

The method of laying out and levelling depends on the sort of farming intended and the lay of land. It is impossible to give rules for these; the best plan would be to obtain the assistance of an experienced farmer in the particular kind of farming intended.

The following drawing shows a small farm of thirty acres laid out for irrigation.



Leading Water.

There are many ways of leading water, viz.:—Between banks in long beds; between banks in squares; on slopes with temporary banks; flooding large flats; and in small furrows for fruit trees, vines, &c.

Between Banks in Long Beds.—These beds should be about 150 yards long by eight to ten yards broad, with a fall of

from two to four feet, dependent upon whether a permanent plant is intended or not. The banks should be about six inches high.

Between Banks in Squares.—This is an excellent plan if the ground allows of it, without a large amount of work in levelling. The squares should not be more than an acre, or they will take too large a quantity of water before being wholly flooded. These squares should be about seventy yards by seventy yards.

On Slopes with Temporary Banks.—This is the easiest and least expensive plan of laying out land for water leading, as very little levelling is required, but more ordinary labour will be necessary, and to ensure even wetting the use of skilled labour is requisite.

On Gentle Slopes.—This is perhaps the best plan, as, there being no banks, the crops are more easily reaped and kept clean. The difficulty of keeping banks clean except by hand labour is the greatest objection to them, and the expense of hand labour about balances the expense of the extra labour in leading.

Flooding Large Flats.—This, of course, is the cheapest way, but it requires a very large stream of water so as to wet the whole quickly.

Watering Fruit Trees.—For young trees, draw the furrows about three feet from the trees and run the water round the trees at least at that distance, without ever touching the stem. For older trees, water in furrows (ploughed) about three feet apart between the rows and away from the trees. In no case let the water touch the stem of the tree.

It should always be remembered in watering trees that the moisture is absorbed at *the tips of the rootlets*, so that nothing is gained by running the water close to the trees over the thick inabsorptive stems. (See "Manual of Practical Orchard Work at the Cape," p. 2.)

Pumping.—Pumping pays as an auxiliary to an intermittent gravitation water supply such as is obtained from many of the South African intermittent rivers. A pumping plant erected on one of the large holes in such a river is of great value in saving crops and in growing food for stock during the winter months, when these rivers often stop running.

Pumping alone pays near a good market for garden crops or high-priced field crops.

House and Farm Buildings.

On ordinary grazing farms the buildings are only considered as part of the farm, and do not greatly add to the value ; this is also the case to a certain extent on irrigation farms, but only when the house and buildings are comparatively too expensive for the size of the farm. The house and buildings for a thirty-acre farm should cost respectively about £100 and £50. A two hundred acre farm could stand a £700 house and £250 buildings.

Farm buildings should be built of brick, with iron pitched roof, wooden buildings being too hot in summer and too cold in winter.

Flower Garden.—Ornamental flower gardens around an irrigation farmhouse greatly add to the selling value of a property, and if the idea of the farmer or speculator is to clear and lay out an irrigation farm with the intention of selling profitably when finished, there is no outlay upon which he will get a better return than on that spent in a small ornamental flower garden round the house.

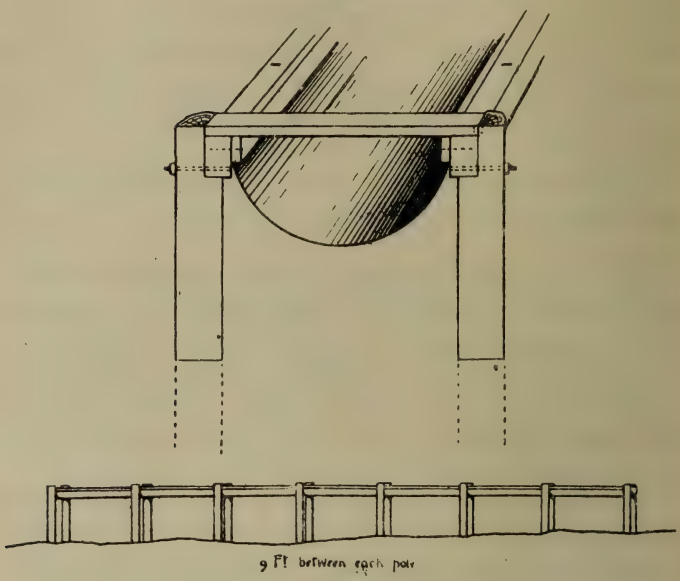
Fluming.—Where water has to be carried over a depression and the soil is porous, it is better to erect a flume than to make an earth bank which would entail endless attention, annoyance and labour. The drawing on p. 120 illustrates a good strong flume suitable to this country.

It must be borne in mind that the cost of erecting a flume will not be returned except in saving labour, &c., to the erector. The purchaser of a ready-made irrigation farm can never be made to see how unlevel it was, and therefore why so much had been spent in development ; so with flumes ; he would ask why ground had not been purchased upon which flumes were not necessary.

Large Tanks.—Where the water supply is intermittent, large underground tanks, open on the top, will be found very convenient for house and flower garden ; the most convenient and suitable size is twenty feet diameter and ten feet deep. They should be built on either good concrete or stone and cement plaster. This kind and size would cost about £30 to £35. These tanks are filled and kept full from the gravitation furrow, and when the dry time comes you will have plenty of water for

house and garden. By terracing these tanks with the ground thrown out and planting bright-coloured plants or shrubs they can be made very ornamental.

Sketch showing Fluming.



Materials Required.

Materials required for 100 yards of fluming at an average height of not exceeding five feet :—

50 sheets galvanised plain iron, 3 ft. by 7 ft.
35 deals, 4½ in. by 3 in. by 18 ft. long.
45 deals, 1 in. by 3 in. by 18 ft. long.
70 sneezewood poles, 7 ft. long.
70 half-inch bolts, 6 in. long.
15 lbs. 6 in. wire nails.
10 lbs. 4 in. ditto, ditto.
3 lbs. 3 in. ditto, ditto.
2 gross verandah bolts.
5 yards roofing felt.

The cost, including labour, is £35. The above materials are exact, no allowance is made for wastage.

General Notes.

Quantity of Water.—The quantity of water necessary to irrigate an acre of land depends on many varying circumstances, such as the class and depth of the soil, the rainfall, whether the irrigation ground is new or not, and the nature of the crops to be watered.

About three inches of water should be put on ploughed ground, and five to six on crops, per watering. Generally speaking, most crops require to be irrigated twice. In Colorado even lucerne is only watered twice in the season, six inches being given each time.

Ground newly put under irrigation requires more water at first, and every succeeding year it requires less, especially if the soil is shallow or the natural drainage bad.

At present, for the Eastern Province, probably 250 gallons per minute would be sufficient for 100 acres.

Value of Irrigation Land.—This depends upon whether the water supply is intermittent or permanent; the richness and depth of the soil; the average rainfall and the proximity of a good market and facilities for sending produce to it.

Rainfall.—Where the rainfall is less than twenty inches per annum, irrigation is generally considered necessary. In South Africa, the humidity of the atmosphere not being excessive, partial irrigation is often necessary with a rainfall of from twenty to thirty inches per annum.

Cost of Irrigation.—It is difficult to say what would be the average cost per acre of making weirs, dams and canals; probably about £2. The cost of clearing the ground, about £1 10*s.*; levelling, £2 10*s.*; making leading furrows, 10*s.*

The value of the land without water may be supposed to be £1 10*s.* per acre, and with water, £7 10*s.* to £12 10*s.*; when cleared, levelled, and planted, £25 to £50, according to the soil, water supply and situation.

Silt.

Most of the South African rivers carry very large quantities of silt in suspension, especially when in flood.

At present the great question is how to get rid of this silt, in the future the question will probably be how to increase it. For the present, how to get rid of it. The disadvantages of it are the rapid filling up of the furrows, necessitating great labour in keeping them to their level, the silting up of intake gates and the choking up of young, tender plants.

The only way to get over the first and last objection is to have large silting pools near the head works; these would be expensive to make and also to clean, owing to their depth.

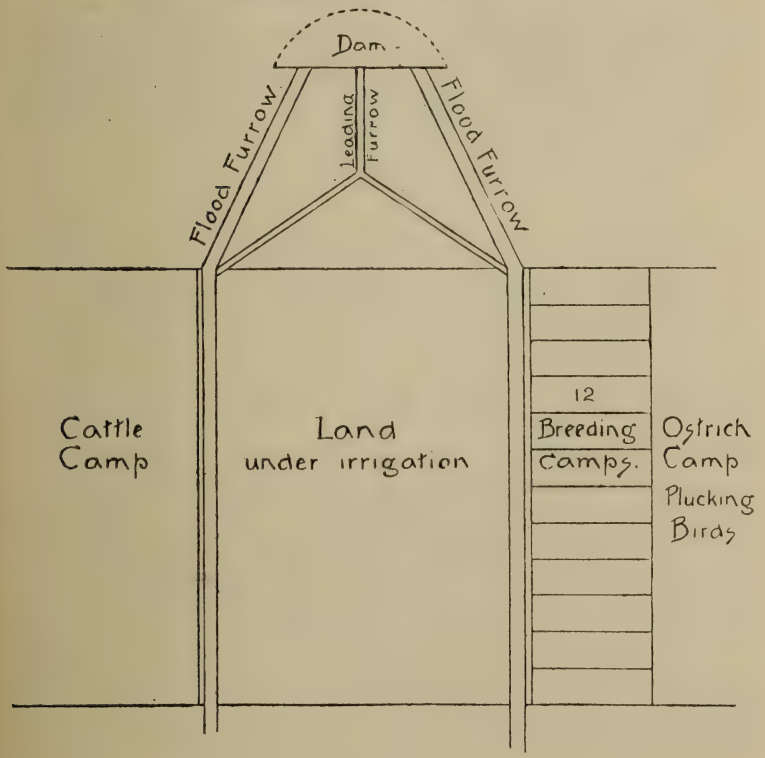
The silting up of the intake gates can be got over by silt gates, which, when open, allow the water to rush through in a lower level than the weir or dam, and so washing out a tunnel in front of the gate. This method works very well on a slow-running river, but on a South African river in full flood there is a likelihood of washing out the foundations of the intake wall. It is also almost impossible to shut the gate until the flood has nearly subsided, owing to the heavy timber carried down and the rapidity of the flow.

STOCK FARMING WITH IRRIGATION.

Comparatively few stock farmers make use of irrigation, although they could do so with very little trouble and immense advantage. Some of the reasons for this neglect are the lack of practical, uninterested advisers to explain the methods of proceeding and the probable cost, the fear of the risk of washaways, the difficulty of obtaining water rights above their land, and the fear in some cases of doing anything that their fathers did not find it necessary to do. There are many inland farms possessing excellent sites for irrigation on a small scale. For instance, take a farm with a good kloof; a large dam could be made where the kloof widens; and below, lands could be laid out, and water from the dam used for irrigation. This, of course, has been done on many farms, but there are others upon which it has

not been done, and upon which it would be quite easy to lay out simple irrigation works, enabling the farmer to greatly increase his stock.

There is very little risk of washaways if the outlets and flood



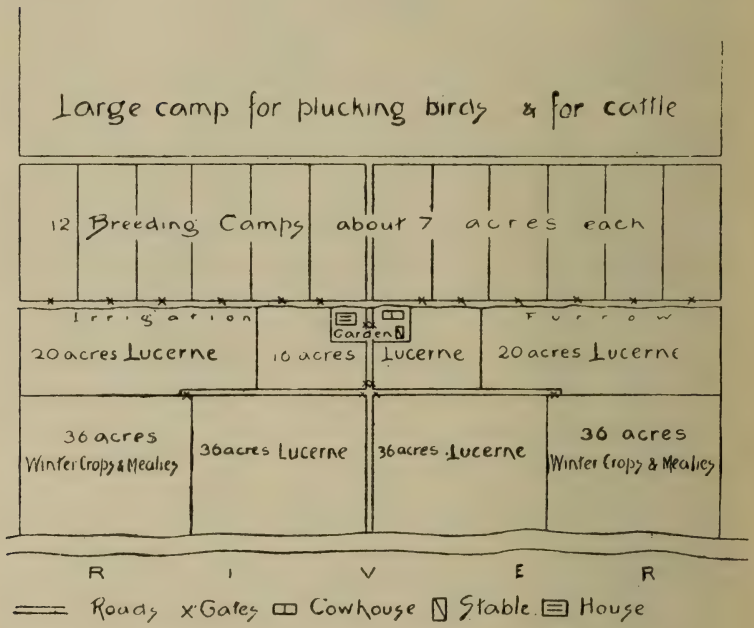
PLAN A.

furrows are sufficiently large, and if the sluice gates leading into the land are kept closed when water is not being led. There should be two overflow outlets to the dam, one on either side; each should extend not less than one-eighth of the length of the dam wall, and should be as low as possible. To conserve an extra quantity of water with safety during calm weather the outlets might be partially made up with loose ground in such a manner that in the event of exceptionally heavy storms the loose ground would easily wash away.

Plan A gives an idea of the position of outlets and flood

furrows, also leading furrows, and the most convenient position for ostrich and cattle camps.

There are many stock farmers with river frontages upon which no use is made of irrigation, and whereon it might not pay to erect costly works, the low-lying land being narrow and not continuous, but it would pay the individual farmer to make a small gravitation furrow and a rough weir, and thereby have plenty of green food for his stock in dry times, besides greatly enhancing the value of his property.



PLAN B.

Plan B shows a suitable way of laying out such a narrow strip of irrigation land.

It will be seen by the plans that the ostriches can be fed from the land with very little cartage, and if not sitting, can be left out on the land when cut. Ostriches, if not used to running in lands, will eat all the weeds most objectionable to the lucerne grower. Breeding birds, when fed in this way on green food,

will have three to four nests in the year and will lay very few infertile eggs.

The Best Crops to Grow for Stock.

The best crops to grow for stock in the Cape Colony with irrigation, are lucerne, barley and maize.

Weight of Green Crops.

Barley { 1st cut, 12½ tons; 2nd cut, 10 tons; 3rd cut, 5 tons } 27½ tons per acre.

Green maize (18 in. rows 12 in. apart), 5½ ft. high, 52 tons per acre.

Green maize (18 in. rows 12 in. apart), 7 ft. high, 87½ tons per acre.

Lucerne in full flower, twenty tons per cut per acre ; five cuts per acre, 100 tons per annum per acre.

It will be seen that maize and barley give the greater weight of green food in the year, they also require less water. Lucerne is much better feed than either of the above and makes fine hay, for which, in comparison, the former are not of much value. On low-lying lands water-grass is often troublesome and will under some circumstances entirely choke the lucerne; but if the crop is always cut and fed the lucerne will keep the upper hand, as after cutting the lucerne recovers and starts first.

Co-operation.—In carrying out a small scheme, such as shown in plan B, where the strip of low-lying land is continuous, co-operation with adjoining holders will be found advantageous, especially with reference to construction of weir and main furrows, right of way, passing on of waste water and uniform prices of labour.

BRAK LAND IN RELATION TO IRRIGATION AND DRAINAGE.

One of the most striking characteristics of South Africa, considered as a farming and stock-rearing country, is the existence, scattered over the surface, of tracts of land quite unfit for the ordinary cultures, owing to the large percentage of alkaline salts in the soil. These are the brak lands of the local farmer. When the soil has become dry and hard after rainfall there appears upon the surface in greater or less abundance a white efflorescence of minute crystals or an amorphous powder. It dissolves rapidly on recurrence of rain, is mainly absorbed by the soil, very little being washed into the surface drainage, but reappears as soon as the rain ceases and the surface becomes hardened by isolation. The salty powder sometimes has a merely cool saline taste, with an after-flavour of bitterness. Sometimes the bitterness, or rather, a nauseous taste predominates, and the saltness is but slight. In other cases the taste is very like that of soap-lye, and this peculiarity is always noticeable in the places where the brakness is found the most detrimental to vegetation, and is what is known as "black brak."

Chemical analysis shows that the salts concerned in producing brakness are sodium chloride or common salt, sodium sulphate or Glauber's salt, magnesium sulphate or Epsom salt, and sodium carbonate, which last may be taken as represented by the sal soda or common washing soda of the shops.

It by no means follows that wherever the above-named salts exist the soil is badly suited for culture. It is the excess, over and above what the ordinary plant-growth can endure without deterioration, that causes barrenness and renders land useless.

Let us now consider what happens when the periodic African rains come upon such land. It might be supposed that all the effloresced salt delivered upon the surface since the last rainfall would be washed away, and escape into the superficial drainage of the district, and so on into the river system of the country. This is far from being the case. The first effect of rain is to dissolve the salt rime lying upon the surface in a few minutes, forming a strong solution. The earth, which has carried it so

long, is dry and porous, and instantly absorbs this solution, long before the precipitation has been sufficiently copious to cause any perceptible water-run along the natural slope of the land. And thus it comes about that even a rainfall of many hours duration is powerless to decrease perceptibly the content of brak salts in the superficial layers. It runs over the surface, and much is absorbed, for the capillarity is for the time reversed, and is acting downwards. But the salts have, by their absorption, escaped from the superficial scour, and are being carried downwards as far as the moisture penetrates. As soon as the dry cycle returns and the land becomes desiccated, they rise once more, and are again delivered upon the surface, and this oscillation of the brak content of the soil goes on, inevitably following the alternations of wet and dry times.

What is true of the impotence of a periodic rainfall to clear the ground of salts is equally true of efforts to subdue the brakness of a small extent of land by means of irrigation of the usual kind, that is, a simple flooding of the surface. The salts cannot be dissolved out and washed away, simply because the porous stratum on which they lie withdraws them at the moment of solution, and holds them over till the next drying out of the surface. We shall see hereafter that it is possible to apply a remedy, albeit a costly one, to amend this disastrous order of things, which has been the despair of the agriculturist in all countries of short periodic rainfall. And to this remedy we shall be naturally led by a consideration of the local causes which bring about the apparently capricious alternation of brak and zoet-land, in patches extending sometimes over many square miles and as often over only a few roods.

But little observation and reasoning from what is observed will be needed to connect the phenomena of the occurrence of brak land here and there with the peculiar nature of the deep-seated water supply. Very large areas of the country are traversed by intrusive igneous dykes, resembling impervious subterranean walls. These mostly run east and west, therefore across the general slope of the country downward to the sea. They are the chief factors in determining the collection and retention of subterranean water. Given a large catchment area, bounded south by one of these dykes running in practically a wide curve for miles without a break; given, too, a retentive

substratum—the water gathered upon it must accumulate and rise until it reaches some crevice in the dyke-wall. There it will escape as a spring. But if such crevice lies low underground, the water will simply pass on uselessly to the next lower catchment area. Suppose, however, the impounded water is never in such large volume as to make its way to an outlet, but is just sufficient to supply continuously the loss occasioned by the capillary upcreep towards the surface and evaporation there. In that case, we have all the conditions necessary for the production of a brak patch of land. However small the percentage of salts in the impounded water, every gallon of it fetched up to the surface and evaporated must leave behind its quota of brak salt. As the cause is continuous, the accumulation of minute additions is continuous too, and soon totals up to a degree injurious to vegetation of the ordinary kind. Such probably is the *rationale* of the production of stretches of brak land of fairly large extent. On the smaller scale, a basin of retentive clay or of ferruginous or calcareous hard-pan, acting as an impermeable sub-layer, may similarly detain irrigation or rain-water, and slowly transmit it upwards to be evaporated away. As before, the isolated hardened surface receives every particle of the saline water, and an efflorescent deposit of salts results, bounded in outline by the concealed extent of the impervious water-basin below.

Clearly the brak phenomena will not in every case accompany the hard-pan layer. Suppose the stratum to have an even upper surface and a uniform dip; then the deep-seated water of percolation is not impounded, and will slip along by gravity down the common slope to which the layer is tilted. But wherever a depression occurs—a pucker, so to say, in the sheet of hard-pan—there will water be detained permanently, its saline content will be carried to the surface, and a brak patch must necessarily follow. Moreover, the existence of such uneven impervious layers with numerous irregular depressions on their upper side, enables us to understand that puzzling and discouraging phenomenon in the culture of mixed brak and zoetveld, viz., that the free use of irrigation water thereon is apt to result in the enlargement of the brak patches, and even the conversion of the whole area into uniformly brak land. In California this result is very common, and the phrase is that

"irrigation causes a general rise of the alkali." What it means is just this: the water flooded on, and percolating downward to the hard pan, is greater than can be got rid of at once; it therefore forms one uniform subterranean water-stratum over the whole length and breadth where previously there had been only water hollows here and there. From this water supply, for a time co-extensive with the surface of the irrigated soil, the inevitable capillarity carries up the moisture, and with it the salts to supply an equally extensive efflorescence as the surface dries out. If the attempt to irrigate be abandoned, things resume their former balance—the brak patches dwindle down to their former limits, and the interspaces, after a year or two, become zoet once more.

The investigation of the conditions producing brak in regions like ours, of restricted periodic rainfall, as compared with those of countries with humid climate and greater precipitation, shows with great clearness that the main difficulty is presented by the *back-leaching*—if it may be so termed—of the limited water supply, that is, its return to the surface under the powerful influence of capillarity kept going by a heated sun-smitten surface. Whatever perpetuates the *downward* creeping of the rainfall-water, and stops its return *upward*, cures brakness radically.

Towards this end there is one complete remedy, and only one—namely, a system of complete subterranean drainage.

The mischief is done by a perfectly natural force, the capillarity of the isolated soil. The remedy prescribed brings to bear another natural force, even that of gravitation, to arrest the rise of the water, and with it the "rise of the alkali" it carries. With an adequate system of under-drains, every cubic foot of water thrown upon the land, whether by rain or irrigation, *must* gravitate downwards towards the outfall, and none will be detained except such contingent as is withdrawn by the root-hairs of plants for their vital processes of growth, is taken up into chemical combination by the mineral constituents of the soil, or is mechanically held as a moisture-film over the surface of each soil-particle.

That Cape agriculturists in a large part of the Colony should think out this matter for themselves, and acquire a conviction of the truth of these conclusions, is much to be desired.

Let it be granted that an adequate system of under-drainage, whereby the remedial force of gravitation should be pitted against the destructive force of capillarity, is costly: perhaps as costly as the original work of impounding the coveted water supply. The question recurs in a twofold form. One may ask whether it is advisable, having spent money on what proves to be an arrangement for the spread of brak, to spend as much more in doing what should have been done at first. No irrigation work taken in hand by men who have a knowledge of agriculture as well as of hydraulic engineering can be complete without the drainage system which is to carry downwards and away the water they propose to throw upon the land. And unquestionably the application of such a system and its intelligent working would ultimately leach out the accumulated alkaline salts, and carry them off to the drainage outfall and, since the bottom water is held in check by the same drains, there could be no subsequent rise of the alkali. The average salt content of the soil thus leached out would be far within the limit of endurance capable by cereal and root crops, and would be governed as to rise and fall in percentage solely by the purity of the water, not by continual accumulations every time the plot received irrigation.

It not unfrequently occurs that, by a happy chance, the arrangement of the strata underlying a stretch of arable land requiring irrigation is such as to lead to a sort of automatic drainage. Places could be pointed out in the Karroo where fertile soil is traversed deep down by a continuous stratum of water-worn pebbles, resting upon the bed-rock of the district, and terminating in the channel of a periodically running spruit. The pebbles mark the line where water once flowed; now they form the desired drainage for the superincumbent alluvium. In such places no amount of irrigation thrown upon the land interferes with its character, or produces the least efflorescence of alkali. They are mute witnesses to the truth that the exit of irrigation-water below is as important as its entrance above. Other localities, too, could be named where only a very sluggish off-flow results from the subterranean trend of the bed-rock on which the arable deposits lie; and here, according to the season and amount of rainfall, the condition of the soil perpetually oscillates between a fresh sweetness and more or less of brak. It is under such circumstances, to say nothing of those where

brakness must be accepted as beyond the true remedy because of its costliness, that certain palliatives are capable of application. At the same time, it must be remembered that their effect is only temporary, and they do not stop the evil by removing the cause.

The first of these is purely a chemical process, viz., the application of heavy top-dressings of *gypsum*. This substance is calcium sulphate, and in the presence of the most pernicious of brak salts, sodium carbonate or black brak, it upsets that salt entirely. The two exchange acid elements, and instead of sodium-carbonate and calcium-sulphate we have calcium-carbonate and sodium-sulphate. Now, land poisoned with black brak and utterly sterile thereby, may bear a very tolerable crop when all that alkaline salt has been converted into the comparatively innocuous sulphate. As to the calcium carbonate or chalk, it certainly does no harm whatever, and may be of great use in helping to flocculate and open up a clayey soil. And the good effect of the gypsum in thus transmuting the black brak will continue just so long as there is any free gypsum left in the tilth. But when it is all exhausted, the black brak will once more begin accumulating, and the work is to do over again. Moreover, the process cannot go on indefinitely, for, at the best, the resulting sodium sulphate is undesirable, and will soon accumulate detrimentally.

Secondly, the surface evaporation of under-water, raised by capillarity from below, is very largely diminished by breaking up the topmost four inches of the tilth into a pulverulent stratum, and by frequent working with suitable implements, keeping it in that powdery condition. Such a cover acts precisely like what gardeners term a "mulch." Capillarity works as usual till the mulch-stratum is reached, and then it practically stops. It is easy to see that by this method a useful superficial cropping layer is obtained, on which shallow-rooted plants can with little difficulty be raised.

Following in the same line, viz., the stopping of surface evaporation, something may be done by the selection of crops which shade the soil as much as possible. When a good stand of foliage has been achieved, the major part of the evaporation arises from the moisture exhaled naturally from the leaves, and this does not contain and set free any efflorescence of brak salts. Of this sort are lucerne and white melilot or Bokhara clover,

beet, mangold, spinach and some sorts of cabbage. However, the method lies within very narrow limits, and is a gardening rather than a farming experiment, for it is found that the alkali is even more prejudicial to seedlings at the first stage of germination than to the more mature plant. Hence there are places where it is hardly possible to sow, whereas the same ground in which seeds refuse to germinate will often permit rooted stock to grow pretty fairly when transplanted into it. However, liberal treatment of a seed-bed made in such brak soil with gypsum will, on the principles previously explained, so far decompose the poisonous sal-soda as to permit of the successful raising of seeds for planting out.

But everyone who has mastered the physical conditions which combine to produce brak land will be convinced that all these makeshifts are of no real avail, and the only and radical cure for brak land, and preventive of slow accumulation of alkali by irrigation, is an adequate system of *Under-draining*.

An Africander Cow being Milked by a Kaffir Boy.

CHAPTER VIII.

DAIRYING.

Previous to the construction and extension of the Cape railways, the transport of the whole of the goods traffic of the Colony was carried on by means of ox-waggons. In the neighbourhood of towns and villages there was thus no means of disposing of the surplus dairy produce after the local demand was supplied. During the summer months, when food was abundant, the local markets were glutted with butter, selling at a few pence a pound, while at other times the supply would fall far short of local requirements, and rise to as much as four and five shillings a pound.

With the extension and connection of the different systems of the railway, butter can now be sent in refrigerating cars to the principal business centres from all parts of the Colony approached by the railways, thereby equalising prices and greatly increasing the local demand; while the quantity of butter imported during the last twelve years has been reduced by more than one half. There is also a constantly increasing number of large dairy farmers devoting their attention to cheese making; some excellent colonial-made Cheese, Cheddar and Stilton, being now regularly supplied to local markets.

The extension of the railways has also had the effect of dispensing with the services of tens of thousands of draught oxen; hence the farmer now wants to breed an ox which will come to maturity at three or four years old, instead of having to keep him six or eight years, as formerly, before he is fit for the butcher. These are the main influences which have led to a more rapid improvement in Cape breeds of cattle during the century.

But much still remains to be done before the Cape dairy industry takes the position which it ought to occupy. Fortunately there are the example and experience of the Australian

Colonies to follow in the matter. It is only about fifteen years since the dairy industry of the Australian Colonies was as backward as that of the Cape has ever been. This state of things has been successfully overcome in Australia by the introduction of cream separators, the adoption of the most approved methods of manufacturing dairy produce, giving greater attention to the selection of dairy cows, and making provision for feeding them when natural vegetation fails. This latter has been accomplished mainly by means of ensilage, which is considered the best and most economical plan of feeding dairy cows. But the greatest stimulus to the development of the dairy industry, especially in the Victorian Colony, has been the action of the Government in offering large bonuses for the establishment of creameries and butter factories and for butter exported to England, while a travelling dairy was fitted up with all the appliances necessary for making butter and cheese on the most approved principles. The Cape Government has found its travelling dairy very useful as an educational concern, and it may be credited with creating a good deal of the dairying done here; but there are hopes that it is only the forerunner of better things such as are indicated above.

These measures in Australia were only commenced in 1888, and the rapid development of the dairy industry since that date has been almost marvellous. In addition to trebling the local demand on account of the superior quality of the butter manufactured and its continuous supply, four hundred tons of butter were exported to England in 1889—90; 1,000 tons in 1890—91, and over 2,000 tons in 1891—92, and so on in an ever-increasing ratio until over 15,000 tons are exported annually from the Colony of Victoria alone, while the prices satisfy the producer, pay the exporter, and at the same time please the consumer.

The latest annual Report of the Cape Government Dairy Expert shows that the importance of making proper provision for dairy cattle during the winter season has not up to the present received that attention from farmers generally that the matter demands, while on the other hand individual farmers who practise proper winter feeding have been more than satisfied with the results. Not only does generous winter treatment of the animals increase the annual production of each cow, but a

larger percentage of breeding increase is obtained, which is an important item in the income of a farmer in a country like this, where cattle realise such good prices. It is pleasing to note that dairy farmers are gradually improving the milk-producing qualities of their herds. With this object in view several importations of valuable stud cattle have taken place of late years, evidencing a confidence in the future prospects of the dairying industry; and probably with the restoration of political tranquillity the industry will receive a general impetus owing to the profitable investment which it offers to men with limited means. At present there are numbers of farmers who are fairly large cattle-breeders, but being perfectly satisfied with the returns received from increase alone, they pay no attention to dairy products. This no doubt seems rather strange *in a country where importations of dairy produce come in on a large scale, and large sums of money are annually spent in buying products from other countries which could be produced within the Colony.* It is also significant to note the attention that is being paid by other Governments to the possibilities of finding a market here for their dairy products. Several of them have actually appointed salaried commercial agents to exploit our markets and keep their Governments advised as to their requirements. This fact should stimulate the dairy farmers of this country to renewed efforts to secure the enjoyment of a large share of their own markets, which are the best in existence for their products. Unfortunately, in years gone by very few farmers have regarded dairying as an industry, merely treating it as a detail, and looking upon it as one of the unimportant branches of their calling.

The farmers in the territory of East Griqualand, which is well adapted for dairying, are giving their attention to cheese manufacture, and with that object a Co-operative Company has commenced operations. It is hoped that this will be the forerunner of other similar companies, which it is possible to form. Those engaged in cheese-making find ready sale for their products at prices ranging from 10*d.* to 1*s.* per pound, a highly remunerative figure.

The farmers have found that by co-operation several advantages are gained. The cost of production is reduced to a minimum, and the uniformity in the quality of large returns

ensures a more profitable market than was possible under the old diminutive conditions.

At the last Agricultural Show held at Kokstad the exhibits of butter and cheese were of excellent quality, and are an earnest of the produce that will be turned out by the farmers in much larger quantities when better transport facilities are attainable.

FLOCK OF FAT CROSS-BRED MERINO AND FAT-TAILED SHEEP.

The stone walls of the Kraal are coped with cakes of "mist," or dried sheep manure.

CHAPTER IX.

SHEEP AND GOATS.

Near the great centres of consumption everywhere the interests of the butcher are paramount, but in the more inland districts the flocks are bred and tended for their wool. After the West Coast grain and wine districts, the Colony may be divided into grass, mixed veld (*i.e.*, grass and Karroo) and Karroo districts. Among the first is the group between the Hottentot Holland Mountains and the forests of George and Knysna. Here most fertile farms stretch along the mountains, which act as natural rain condensers for them. Along the coast the lowlands offer good pasturage, and health to the animals owing to invigorating sea breezes. Passing the great forest-lands that surround the Knysna, the grass districts of Uniondale, Humansdorp and Uitenhage are reached, and further on the eastern slopes of the Sneeuwberg Mountains, and the country which formed the cradle of the sheep-farming industry for the East—Albany, Bedford and Somerset East. Here there are many famous stock-breeders and large flock-masters, the better farms holding from 5,000 to 10,000 sheep.

The group of districts in the East average about 242 sheep to the square mile ; and the northern grass districts with an average of about 275 sheep, have proved most valuable additions to the Colony.

The bushes of the Karroo, which rise but a few inches above the ground, send their roots down to a considerable depth, rendering them almost indestructible. These are invaluable fodder plants for sheep. The animals can sustain life even on the stumps long after every sign of leaf has gone, and the Karroo farmer does not despair so long as there is water in his spring. He spends large sums of money on dams, and on the opening-up of springs by the aid of dynamite, or steam-pumps and ordinary pumps for supplying his stock with water. Norias,

or bucket-pumps, are now greatly in favour. During severe droughts the losses in live stock are extremely heavy, but when the rain falls in sufficient quantity, there is a general resurrection of the vegetation. The plants all sprout out again, grass springs up, and there is an abundance of food for the flocks, which after suffering from the effects of the sudden change, soon prosper and increase more abundantly than anywhere else in the world.

No doubt great changes in the pasturage must be effected by the agency of the sheep themselves. Their energy in feeding is chiefly directed to those plants which form their best food. These naturally suffer and lose ground to the advantage of others that are less suitable as nutriment. Thus, as pointed out by the late Dr. Shaw in an interesting paper contributed by him and read many years ago before the Linnæan Society, the *Gomphocarpus* species have been favoured particularly, especially the *G. fruticosus* plant, indigenous to the midlands of the Colony, never eaten by any sheep, which has come to cover extensive tracts in this country. In the same way the *Chrysocoma tenuifolia*, originally belonging to the south-west of the Colony, has become the prevailing plant of late years. It was first eschewed by sheep, but it is now in some parts their only sustenance, so much so that the mutton becomes impregnated with its rather pleasant aromatic flavour. It was at one time feared that the Karroo sheep-walks would be gradually destroyed as such, first from the above-mentioned causes, and then from the system of over-stocking : but both evils are kept in check and remedied by that greater evil, the periodical droughts, which take away the surplus stock, weed out the weaklings from the flocks, and keep alive only those plants which are indigenous to the locality, have a remarkable spontaneous reproductive power, and are at the same time the best for stock.

During the last decade wools suitable for combing have become largely in demand, and sheep have been imported from all quarters of the globe—Sturgeons, Australians, Tasmanians, and lately the wrinkled sheep bred in Vermont, United States. With the exception of the old sheep country between Caledon and Knysna the imported stock is distributed all over the Colony, and from the breeding centres the progeny of this stock is draughted off again into the neighbouring districts. Thus the

breeders in Beaufort West, who go to work with great intelligence and perseverance, hold annual ram sales, and enable the smaller farmers to purchase animals at from £3 to £6 per head, often as good as imported stock.

In Cape Town the principal wool season commences in August, and lasts until January to March. Nearly all the wools coming into this market for sale are of twelve months' growth, excepting those from the agricultural and wine districts to the north-west of Cape Town. From these districts a rather common wool is brought to market, the first clip in September and October, and the second in March and April. About 5,000 bales from the grass districts between Caledon and Riversdale are brought forward during October and November, mostly fleece-washed, the remainder being wool from the Karroo districts, generally heavy in the grease and rather earthy, but free from faults, and well adapted for scouring. The western snow-whites fetch the highest prices in the London market.

Of greasy wool, the lighter veld wools, which are also stronger in staple than the Karroo wools, fetch the highest prices. They are fine enough to supply the demand for Bradford, which is for a wool that will produce a 60*s*. top, and they are well adapted otherwise also for the comb. For America, the yellowish Karroo wools are mostly preferred when of good length, fairly uniform, and not too heavy. The reason for much short wool coming forward lies, no doubt, mostly in the negligence and often in the neediness, of the more ordinary farmers, who often shear twice a year. By shearing twice, the scab is, to outward appearance, kept under more, and twice shearing brings ready money twice a year to the farmer. In many localities, however, as in a district like that from Cradock to Naauwpoort, of a high mountainous character, farmers are compelled to study the seasons, and will shear six months one year and wait, perhaps, twelve months until the next clip, a cold winter season threatening serious losses in shorn stock.

In the East London exports the quality of the scoured wool, although improving from year to year, does not come up to the excellence of the more western ports, but in the quality of grease wool it bids fair to outshine the remainder of the Colony. The better class of farmers take a pride in their clips; they make it a rule to sort their wool most carefully, and ship their

productions under their own names or brands. With regard to ordinary wools, this port is the market for the production of the Native sheep-owners, and it is calculated that of wool grown by natives along the border and in the Transkei, about 20,000 bales pass through East London annually, 8,000 bales of which are brought on the market as fleece-washed. The Transkei native wool has considerably improved in quality and condition during late years, particularly in those districts in which the Scab Act has been enforced by Government. Many native flock masters are studying the improvement of their flocks by introducing high class rams. The whole of the Native Territories are under a compulsory Scab Act, except Pondoland, which will shortly be included. A curious feature is that the stock belonging to the natives is much cleaner than that of Europeans. A large portion of the white farmers wash their sheep before shearing them, the decision with regard to this depending mostly upon the water supply.

From Mossel Bay the exports are the production mostly of its own and the Riversdale district, and many of the clips shipped fetch the highest prices in London owing to their fineness and strength of staple; the intelligent breeders in these districts have understood how to preserve these qualities in their sheep. The common goats of the Colony are farmed with principally in the dry Karroo districts to the north and north-west of the Colony, in the native territories, in many of the coast districts, and in the bush country where sheep do not thrive. In the agricultural districts also they are largely raised as a source of cheap food for the servants, milking purposes, and the stock of poor farmers, both European and native, in all the districts of the Colony. They are also a necessary adjunct to all sheep farms, where they perform the functions in great part of sheep dogs, only instead of driving the flocks they lead them. When a flock of sheep require to be kraaled, or penned for any purpose, a couple of kapaters (castrated male goats) are employed to lead the flock into these enclosures, which they do very efficiently, walking in front with a stately dignified gait, as if conscious of the important duty which they are discharging; the sheep crowd in at the gate immediately behind them. It is hardly possible to estimate the saving of time and temper which a few well-trained common goats will effect on a large sheep farm at times

Angora Goat, Young Ewe.

Angora Goats, Young Rams.

of shearing, dipping, dosing or dressing, when portions of the flocks of sheep require to be led in succession into a small and strange enclosure to be caught; while their services in leading flocks of sheep which have to travel long distances through the Colony, crossing rivers, &c., are simply indispensable. Two such leading kapaters, or "Voorloopers," as they are called, will take a large flock of sheep to a good-sized river in sections of one hundred or more at a time. The plan adopted is for one man to stand on each side of the drift. The goats are launched into the river, with as many of the sheep as can be got to follow them. As soon as the goats reach the other side, the man standing there catches them and holds them until the sheep swimming after them have reached *terra firma;* he then turns the goats' heads to the river, which they recross, to be caught again and relaunched with another consignment of the flock; and this is repeated until the whole flock, often numbering about 2,000 sheep, are safely led across the river.

During the forty odd years that Angora goat farming has been established, the extension of the industry has been very satisfactory. According to the latest returns, there are now 2,934,057 Angora goats in the Colony. The majority have been necessarily derived from the common goat ewes of the Cape, repeatedly crossed with more or less pure-bred Angora rams, for many Angora goat farmers have not realised the importance of breeding from pure-bred rams only. There are, however, for the credit of the Colony, a large number of Angora farmers who are fully alive to the necessity of constantly grading up their stock with pure-bred rams, and these are of the best which can be procured. The success which has attended the enterprising skill of such breeders has abundantly shown that mohair can be grown as perfect in quality and as beautiful in lustre as any mohair produced in Angora itself.

A well-bred Angora should be closely covered on all parts of its symmetrical, rounded, substantial, and well-balanced body—with single locks or ringlets of long, white, wavy, silky, and lustrous hair. It must be free from kemp, an indication of the Boer goat relationship, and as far as possible of fine quality throughout, although it need not be expected that the hair of the breeches, which naturally tends to coarseness, will be as fine as that growing from the neck and shoulders, or as short and

soft as that grown on the belly and between the thighs. In addition to the long valuable hair, there is an inferior undercoat of fine hair like the second coat of a collie dog, which is removed as "noils" in the process of manufacture. Mohair of good growth may naturally vary on the same animal from nine inches in its longest parts to six inches and less. A fleece hanging from the side of the animal ready for shearing should fill the hand when grasped, and feel dense, but soft and downy to touch; and as the goat stands its coat should appear to touch the ground. Indications of good breeding are exhibited in a neat, well-proportioned head, a broad forehead, with prominent eyes, and a narrow and finely cut nose. The ears are broad, thin, flat, and pendent, their outside surface, along with the face and legs, covered with fine silky white hair. The flattish horns should be light in colour, much larger in the case of the ram than in that of the ewe, becoming twisted and spreading outwards with an inclination backwards. Thick, erect, dark horns indicate an excess of Boer goat blood.

All the wool washeries throughout the Colony are worked by steam power, excepting the Waverley Mills. The process is everywhere the same, the wool being first soaked in hot water and then rushed through cold water drums by a process invented in this Colony and called after its originator, "Niven's Patent.' When clean, the wool is turned out on large drying-grounds carefully paved with smooth pebbles, and the African sun gives it that brilliant whiteness for which it is famous.

The following are the exports of Cape wool for the years indicated, viz.:—

	Bales.	lbs.	£
1900.—Fleece-washed ...	3,631	1,026,036	34,946.
Scoured	25,454	4,555,665	264,282.
Grease	59,182	22,089,335	538,581.
1901.—Fleece-washed ...	4,859	1,368,739	42,657.
Scoured	34,080	6,212,019	302,774.
Grease	151,835	57,628,941	1,143,815.

Fleece-washed wool is usually supplied to the market by Kaffir flock-masters, and the term signifies that the wool was washed on the sheep's back. The process is simple enough, for the sheep are merely driven three or four times through one of

those quick-running streams of fresh water that are so plentiful in Kaffraria. When the sheep is dry the fleece is clipped and exported.

The export of Mohair for the same periods is as follows:—

1900	9,027,631 lbs.	£489,905.
1901	10,813,239 ,,	502,605.

CHAPTER X.

THE HORSES OF THE CAPE.

A FEW years ago one of the most important questions that exercised the minds of horse-breeders in Cape Colony was how to increase the size and substance of their existing horse-stock by cross-breeding, and capable authorities who had had experience of the results of the Arab cross both in this Colony and elsewhere, recommended the Cape horse-breeders to cross their mares with the best description of Hackney or Cleveland stallions, and to maintain the size and character of the breed by importing the best English thorough-bred blood and bone that money could buy, or first-class hunter-stallions, almost thorough-bred, having only a dip into a stronger breed to give the requisite substance and power.

It was with the object of carrying out these views that the Cape Government imported forty-one Hackney stallions, and one big-boned thoroughbred in 1888—89 and 1893. Mr. W. H. Struben about the same time imported twenty registered Hackney mares and four Hackney stallions. Previous to these importations a limited number of Hackney stallions were imported by individual breeders, and their numbers have been largely increased during recent years. The results of the importations have been very satisfactory, especially where the mares had a large strain of thoroughbred blood, and due care was taken of the progeny.

Some breeders and their assistants seem to forget the importance of looking closely after the mares at foaling-time and ensuring that, when the natural vegetation fails, properly preserved food shall be given to the foals. Of course to neglect the mare and her foal in their time of helplessness militates against the raising of the standard and quality of the horses, no matter what breeds are imported.

The requirements of the Colony for heavy draught horses are liberally met by well-known breeders in Cape Town and

Imported Suffolk Punch Stallion.

Imported Cleveland Bay Stallion.

elsewhere, and for some time past superior thoroughbreds have been imported since the revival of horse racing under the auspices of the South African Turf Club. Quite recently the Table Bay Harbour Board imported 150 Clydesdale mares, and altogether more attention has been given to the improvement of Cape horse stock during the last fifteen years than during the previous twenty years. It is more likely than ever that the horse-breeding industry will take its proper place as one of the principal pastoral pursuits of the Colony, and, owing to the world-wide popularity that the South African bred horse has gained during the recent war, the industry may even exceed expectations.

The census of 1891 shows that there were 444,147 horses of all classes and ages in Cape Colony alone, a far greater number than were actually required for the Colony's own use; yet good horses have ever been scarce, and the surplus stock in normal times was of such a character that they could not be disposed of. How far the crocks have been weeded out by recent military commandeering has yet to be seen, but no doubt many of them remain and consume the food which should be for the maintenance of better and more profitable animals.

Cape Colony is well adapted for horse-breeding, for there horses kept under proper management are freer from general disease than is any other class of stock. In this Colony, where horse-sickness only appears as an epizootic at intervals of ten to fifteen years, all that is requisite to prevent losses from the disease is proper shedding during the prevalence of the epidemic, and ordinary forethought in providing for the regular supply of a little food which good horses always pay for.

MULES.

Mule-breeding is carried on to a considerable extent in many districts. According to the last census returns (1891) there were about 51,000 mules of all ages in the Colony; there are more than double that number from the importations during the war. Comparatively the largest proportion of these are used in the Western districts, where almost the whole of the agricultural work is done by them, and the greater portion of the transport service also. They are also largely used in towns

and villages by contractors, builders, and tradesmen, in Scotch carts, and similar vehicles, both in single and double harness.

As transport animals, in the large and dry Karroo districts they are simply invaluable, being strong, hardy, comparatively free from disease, and capable of living and thriving on the coarsest and scantiest vegetation.

In the Karroo districts are bred the majority of the mules of the Colony, although many of the larger sized animals are now being raised in other districts. They are much less trouble to rear and more economical than horses. In fact, they rarely receive artificial care or attention of any kind until they are put to work, which is generally when they are about two years old.

They get very little training; the ordinary plan is simply to inspan the young ones in the centre of a team containing four or six others, and allow them to settle down to work in their own way. And although the majority of those which are treated in this manner retain a certain timid, semi-wild, stubborn *mulish* disposition, there are very few that are really vicious amongst them, while under proper care and management they become as docile and tractable as horses.

The hardy character of the Cape mules and the absence of inherent vice amongst them are doubtless due to the fact that the Cape horse, their progenitor on the dam side, is distinguished by the same characteristics. Captain Hamilton, who purchased 1,250 for the Indian Government, expressed himself as highly pleased with the class of mules which he saw here, and stated that they would compare favourably with any that they had in India.

ASSES.

With respect to asses, the census returns show that there were 45,384 of these slow but patient slaves in the Colony in 1891. They are bred and used principally in the Karroo districts to the north and north-west, and are used mainly as transport animals by traders and others whose object is not to get over the country rapidly but economically. Spans of twenty or more of them in front of a waggon are frequently met with, slowly wending their way along the main roads in the dry Karroo districts. A few donkeys are used in towns and villages by small tradesmen and costermongers, and a few are elevated to a distinguished

DEXTER-SHORTHORN BULL.
Height at Shoulder, 4 feet ½ inch; Length, Shoulder-top to Tail-head, 4 feet 3 inches; Girth, 7 feet 3 inches; Dewlap, 13 inches from the ground.

DEXTER-SHORTHORN HEIFER.
Three years old, Five Crosses, from a Dexter Cow by Shorthorn Bulls.

position in connection with a fully-equipped gentleman's establishment; but their principal lot is that of the poor man's slave—the most economical motor force in the Colony.

CATTLE.

It is as a draught animal that the *Cape ox* appears to the best advantage. In that capacity he has few equals and no superiors. In shape and general character he is quite different from any of the modern European breeds of cattle, and is specially adapted for draught purposes. He has a strong, proportionately heavy forequarter, with a large development of the muscles of the upper part of the neck and withers for holding the yoke; a close, compact body, light and drooping hindquarters, and splendid legs and feet for travelling. When in good condition, he presents a certain symmetry and beauty of form which is much admired.

Africander cows when milked by hand will only give up their milk to the milker in the presence of their calf. The plan adopted is as follows: the calves are kept separate from the cows and are driven into a separate kraal, adjoining the kraal in which the cows are placed. When the milker comes he calls to the boy in charge of the calves to let a certain calf out, which as soon as it escapes through the gate runs straight for its mother, and commences to suck. The cow then stands and allows the milker to fasten her hind legs together with a reim, after which he knocks the calf away from the udder, and commences to milk, drawing off as much as he considers sufficient, leaving the calf to drain the udder dry. The same process is repeated with the others. If the calf of one of these cows happens to die, the cow refuses to give up her milk, and very soon becomes dry. A stratagem to deceive such a cow is often tried, and frequently succeeds. It consists in skinning the dead calf, stuffing the skin, and laying it alongside the mother, who smells it and is comforted, and commences to let down her milk.

Another habit of these cows, when they calve out on the veld, is to hide their young in some bush or sheltered spot. And it is astonishing how strong the wild instinct is in the calves, for they will lie a week or more in perfect concealment. Of course, if the calf is not found the cow cannot be milked—hence, every

effort is made to discover its hiding place. The usual plan is to keep the cow in the kraal for twenty-four hours, and then to watch where she goes, being careful not to let her see that you are following.

There is little doubt that the foundation stock of the improved breed of cattle formed at the Cape were Frieslands. The *Cape cow* is dominantly *Friesland still;* that is to say, there are strongly marked Friesland characteristics about the majority of them. The breed has during the present century been largely crossed with the *Kerry*, the *Alderney* or *Jersey*, and the *Ayrshire* breeds, and the characters of each of these breeds can be observed in the Cape cow, the one or the other preponderating in a degree according to the impressiveness of the last sire, or the repetition of the same cross.

Four and a half to five gallons of milk a day is quite a common yield for the above stamp of Friesland cows to keep up for months when properly fed. Large numbers of them have been sent to all parts of South Africa, at prices ranging from £15 to £25 a-piece, and picked ones at much higher figures.

Besides this composite breed, as it may be termed, there are a number of pure-bred herds of Friesland cattle in the Cape Peninsula, and a greater number that are dominantly Friesland throughout the Western Province; that is, herds in which nothing but pure-bred Friesland bulls have been used for a number of years. This breed is undoubtedly the favourite with the Dutch farmers. The prominent breeders of pure Friesland cattle in the Cape Peninsula are Messrs. F. Mellish, G. Gie, &c., while to the late Honourable J. H. Hofmeyr is due the credit of importing a large number of the finest animals of this breed that have been introduced into this Colony.

There are also a few very fine small herds of pure-bred *Jersey cows* near Cape Town.

A number of pure-bred *Kerry bulls* have been imported. They are used principally to cross with the larger breeds to give compactness and hardiness, and to improve the quality of the milk.

In the Eastern Province of the Colony, more particularly in the sweet grass-veld districts, the *Shorthorn* is the most popular breed of cattle, especially with the English farmers; and where the conditions are favourable and there is abundance of food

Dexter-Kerry Bull.

Dexter-Kerry Cow.

OSTRICHES.

this breed thrives and grows out well, giving the best average returns to the farmer where milk and beef are both considered.

Mr. William Southey, of Middelburg, has established a very fine herd of pure-bred Devon cattle. This compact, hardy breed of cattle is peculiarly adapted for dry Karroo districts, where it is able to maintain its size and condition, and makes an excellent cross with the Africander cattle.

Mr. Booysen, of Graaff Reinet, is the only breeder of pure Jerseys in the Eastern Province ; but there are many individual pure-bred animals of both breeds scattered throughout the province and a greater number of herds that have a large infusion of the blood of these dairy breeds.

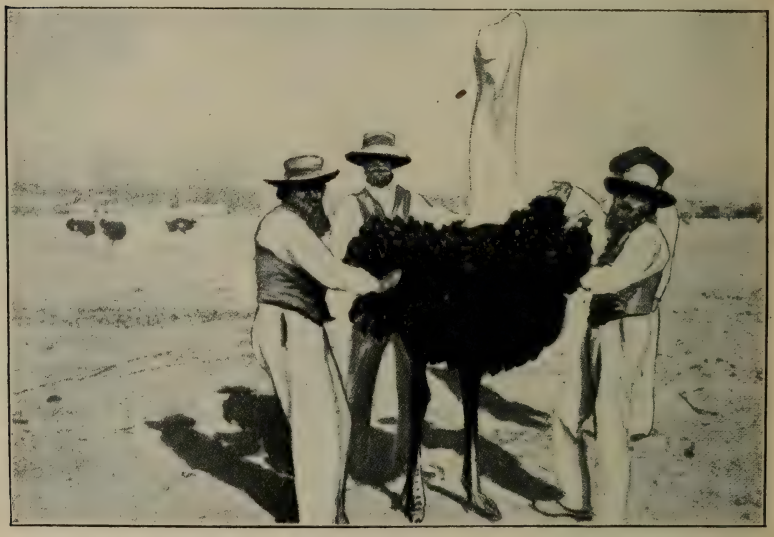
The Friesland cattle are now largely represented in the Eastern Province, and have been fast gaining in popularity during the last fifteen years.

OSTRICHES.

The highest value of the export of ostrich feathers from South Africa previous to 1893 was in 1882, the weight that year being 253,954 lbs., and the declared value £1,093,989. The year 1886 saw the greatest export in feathers ever made up to 1893, viz., 288,568 lbs., but the declared value was only £546,230, being a fall in value of over 50 per cent. as compared with 1882. This gave a great check to the industry, and the weight of feathers exported continued to decrease till in 1891 it was but 198,046 lbs. From 1890 the value again rose, and the exports have steadily increased, as the following table of exports, from the Customs Returns, will show :—

	Weights in lbs.	Declared value.
1893	259,933	£461,552.
1894	350,404	477,414.
1895	353,626	527,742.
1896	322,453	519,539.
1897	355,196	605,058.
1898	369,778	743,565.
1899	373,182	842,000.
1900	412,832	876,801.
1901	412,337	839,049.

Oudtshoorn, with its great facilities for placing lands under irrigation and growing lucerne and other crops, is first on the list of ostrich-rearing districts, the total number of birds there being 46,290; Albany has 17,757 birds; Somerset East, 19,266; Uitenhage, 19,866; Willowmore, 7,754; Cradock, 8,968; Jansenville, 5,769; Humansdorp, 5,835; Riversdale, 7,815; Bedford, 7,305; Calvinia, 4,674; Swellendam, 6,045. Other districts carry smaller numbers. The income from ostrich-farming for birds and feathers is double that from sheep-farming, but the successful carrying on of the industry requires knowledge and experience, close personal supervision, and suitable pastures, such as the mixed edible bushes and grasses of the Karroo.



Plucking an Ostrich. Head Covered with Bag to Keep the Bird Quiet.

When the feathers are ready for market the birds are yarded, and the plucking begins. The tails and long black and drab feathers are pulled out, the white feathers being cut off and the stumps left for two months, till the quill is ripe, this being done to get the feather before it is damaged, and the quill being left in so as not to injure the socket by pulling it before it is ready to be shed. Some breeders, we are told, take only one crop a

year, and draw the stumps in summer, when the pasturage is good and the birds are in best condition. Much care and attention is now being given to the selection of birds for breeding, and great improvement in the condition and quality of feathers produced is looked for. On a few of the best ostrich farms the birds are dipped immediately after being plucked, owing to their being much annoyed by a large black fly, that infests them in great numbers and bites them severely. The tank in which they are dipped is a sunken one about seven feet deep and forty feet long, filled with water heated up to 103°, and a preparation of sulphur or carbolic acid added. Into this they are pushed bodily, and are made to swim out; the smell of the sulphur remaining in the feathers many weeks afterwards keeps the flies away.

The feathers are sorted into the different qualities, and done up in bunches, either for sale in the Colony or for shipment to England. Dairy-farming can be advantageously carried on in conjunction with ostrich-farming; the cattle eating the coarser grasses, and tending to keep the bush from getting too thick for the ostriches to pass amongst it. All the labour on the farm may be done by natives, who make excellent servants for attending to stock.

ANIMAL DISEASES.

The law designed to prevent the spread of contagious and infectious diseases amongst cattle and other animals requires the owner of an animal affected with any such disease to either destroy or isolate it, and to give immediate notice to the Resident Magistrate of his district or the Field Cornet of the ward, or the nearest Justice of the Peace, Inspector of Native Location, or Scab Inspector, and to the occupiers of all contiguous lands. A Board is then formed consisting of one of the above officers and two landowners, who decide whether the infected animal shall be destroyed or isolated, or dealt with in such manner as they may deem expedient to prevent the spread of the disease. Resident Magistrates are empowered to quarantine infected areas and to prohibit the removal of *all* animals therefrom, and such quarantine may be continued by proclamation until the disappearance of the disease. Protection from

introduction of contagious and infectious diseases from over-sea is afforded by veterinary inspection and quarantine at the ports of landing.

Imported breeding *cattle*, unless accompanied by a certificate to the effect that they have been submitted to the tuberculin test and have not given any reaction indicative of the presence of tuberculosis, are quarantined until so tested.

Imported *horses* found on arrival at any port to be affected with glanders are immediately destroyed, and the remaining portion of the shipment quarantined and tested with mallein. All expenses of inspection, quarantine, destruction, are borne by the owner of the animals.

Imported *pigs* require to be accompanied by a veterinary surgeon's certificate of freedom from the appearance of any contagious or infectious disease, that they have not been moved out of a swine fever infected area, and that the movement is not prohibited by any provision of law then in force in the country in which the movement has taken place.

All imported *sheep* are placed in quarantine immediately upon being landed, and detained until granted a clean certificate.

A Farm on the Southern Borders of the Great Karoo.
A typical Stone-faced Earth Bank of a Water Dam in the foreground, Sheep and Cattle Kraals in the background, and long strong Rands or Ridges good for Farm Stock, including Goats and Ostriches.

PART II.

THE DIVISIONS OF THE CAPE.

ABERDEEN.

ABERDEEN, the principal town in the district, is situated at the foot of the Kamdeboo mountains, at an altitude of 2,850 feet, and has a population of 1,500.

In certain parts of the district large areas of land could be placed under cultivation but for the small rainfall—about twelve and a half inches. The land is exceedingly fertile, and were the rainfall up to the average of other districts where agriculture is successful, Aberdeen would probably be a large producer. For several years past there has been a succession of droughts, which do not yet seem to have thoroughly broken up. There are excellent sites for water conservation. Most of the farmers exercise considerable adroitness in the use of the water they are able to save for irrigation purposes. The principal reason why greater trouble is not taken to conserve water in large quantities is that the expense of irrigation works on a large scale is beyond the means of the farmers themselves, who seem to be waiting for the inauguration of a national scheme of irrigation, just as they appear to be expecting the advent of some genius who will come along with an instantaneous prickly pear eradicator. In some places the prickly pear has become a disastrous nuisance, and in general the poorest of the farmers seem to have lost heart and given up contending with it.

There are opportunities for the bestowal of capital in planting vineyards and fruit orchards on a large scale on advanced lines, for which eligible lands would have to be acquired within the watershed, and conservation works would have to be provided.

The large flocks of Angora goats in the district have nearly

all been bred from pure stock. Sales of mohair are held in Port Elizabeth periodically, and top prices are usually obtained.

The annual yield of oat-hay is 36,750 bundles, and there are in the district 4,500 Merino and 22,000 Cape sheep, 237,797 Angora goats, 1,660 asses, and 3,000 ostriches.

Post-carts run to Aberdeen Road Railway station, twenty-eight miles, three and a half hours.

The area of the division is 2,645 square miles, and there are 220 farms.

ALBANY.

The division of Albany, in which Grahamstown, the capital of the Eastern Province, is situated, is a flourishing district for ostrich, sheep and cattle farming, fruit-growing, tobacco, cheese-making, and general agricultural produce. Among fruits the pineapple grows well, and will probably be more extensively cultivated in the future owing to the markets at home and abroad that always await its appearance.

At the same time large areas of cultivable land in this district are lying comparatively idle owing to the sparseness of population, lack of capital and enterprise, and the want of irrigation works. There are many excellent sites for storage dams, and thousands of acres of fertile soil in the valleys ready for the application of water.

The valley soils are usually a mixture of sandy and red kinds, with here and there considerable areas of dark rich loam. On the plateaux they are mostly red and sandy, minus the addition of the rich loam of the valleys, where in many parts it goes down from ten to forty feet in depth. The prices probably ruling at present range from £2 to £5 per acre approximately. Some of the owners assess the value of their land at from 7*s*. 6*d*. to 10*s*. per acre for sour uplands, and for river lands 20*s*. per acre, while others state £3 to £4 for unirrigated lands and from £3 to £30 for irrigated and cultivated land.

Wheat sown in the middle of July is cut about Christmas, and can be followed immediately by either beans or potatoes.

Irrigation to some extent is practised on most of the farms, and in many places the rainfall has been insufficient for the last five years. Most of the farmers advocate the making of dams.

Colonial Government Bacteriological Institute, Grahamstown (Exterior View).

There are openings for nurserymen and stock-breeders in many parts of the division, especially in the vicinity of Grahamstown and other principal townships.

Irrigation is sometimes applied in the district by steam power. In one instance a steam engine and centrifugal plant does very good work on a small scale. A representative farmer pointed out on the Bushman's River an excellent site for a reservoir which, at a cost of a few thousand pounds, could be constructed for the irrigation of over 3,000 acres of good land.

The best paying crops on the uplands are oat-hay and Kaffir corn, and on the river lands barley, mealies, and Kaffir corn. On a smaller scale the best paying crops are tobacco and potatoes, cultures that are capable of great extension.

For the last five years drought and rust have stopped the cultivation of wheat.

Grahamstown is situated on the railway line, and has a population of 11,000 persons, 4,000 of whom are coloured. But for the presence of coloured persons here and there it would be easy for a visitor to imagine himself passing through the streets of a flourishing country town in the south of England, so much does the old-world civilization pervade the place. There are two excellent newspapers, *Grocott's Penny Mail* and the *Journal*, which circulate throughout the district; there is a well-patronised public library, containing upwards of 17,000 volumes, and a museum, which is one of the best in South Africa. There is also a Government Bacteriological Institute, which has done and is doing excellent work for the Colony. There are two bishoprics of the Anglican and Roman Catholic denominations in the town, each with its cathedral.

The Presbyterian, Wesleyan, and Baptist bodies have commodious churches, and the Salvation Army has its headquarters here. Besides a Public School, there are several high-class schools in connection with the Anglican, Roman Catholic, and Wesleyan churches. The reputations of the Albany General Hospital and the Eastern Province Lunatic Asylum stand very high.

Post-carts run from Grahamstown to Alexandria, thirty miles; Fort Beaufort, forty-five miles; Breakfast Vlei, thirty-five miles; King William's Town, seventy-four miles; Carlisle Bridge, twenty-five miles; Vaal Vlei, twelve miles.

The area of this division is 1,685 square miles, and there are 341 farms.

The annual average rainfall is nearly twenty-one inches, and November is the wettest month in the year.

ALBERT.

Burghersdorp, the chief town in the Albert district, is on the Cape Government Railway, contains a population of 1,280, is situated 4,554 feet above sea-level, and is 243 miles from East London. It ought to be resorted to by invalids who require such a climate as the district provides for weakly and impaired constitutions. The town itself is situated in a valley well protected from those breezes that are so often harmful to persons in weak health. The summer is very hot, but the autumn and winter are all that can be desired. Water supplied by pipes is plentiful for household and other purposes. There are several churches and a good library.

Near Burghersdorp cultivation as well as sheep and cattle grazing are carried on. Cheese is manufactured, and fetches 1*s*. per pound and upwards. Most of the farmers apply irrigation water, and, although the soil is frequently of a heavy character, good crops are secured. Barley and oats are very largely grown.

Great developments will probably take place in this district, but it seems essential that the farms should be reduced in size, or divided so that the untilled land may be utilised. Although a fairly large portion of the land is under cultivation, profitable farming could and would be carried on on a much larger scale if the water supply could be regulated more seasonably.

On none of the farms does the existing rainfall appear to be sufficient, and irrigation is in nearly every case applied to some extent. Some of the farmers place a higher value on their lands than we should be disposed to give. One, whose principal crop is lucerne, and who states that he grows it all the year round, only watering it after every cutting, assesses the value of unirrigated land at £1 10*s*. per acre, and irrigated at £15 per acre. There seems to be some justification for these prices in the fact that there is every variety of soil, from light sand to heavy clay and loam, of which the settler may make his choice.

A farmer pointed out that the district is naturally adapted for dams, that hundreds of them could be made, and the surrounding country would be enriched accordingly. Another farmer in the district suggested that a weir might be thrown across the Stormberg and Wonderboom spruits with great advantage to irrigation; indeed, here and in other places the opinion is expressed that large dams, constructed so that they may catch the water during rainy seasons, would increase the prosperity of the division.

Lucerne, barley, potatoes, oats, and wheat are the best paying crops in the district.

The average annual rainfall is 21·12 inches, and March is the wettest month in the year.

The last recorded annual return showed 21,053 muids of wheat, 1,739 of barley, 2,243 of maize, 8,604 of potatoes, and 411,970 bundles of oat-hay; and that there were in the district 388,630 Merino and 8,841 Cape sheep, 53,332 Angora and 1,896 Boer goats, 860 stallions, 6,634 mares, 3,616 geldings, 1,000 bulls, 15,198 cows and heifers, 7,727 oxen, 1,012 ostriches, and 1,812 pigs.

There are 583 farms in this division, which has an area of 2,660 square miles.

A post-cart runs from Burghersdorp to Witkop, twenty miles.

ALEXANDRIA.

This is a district devoted to fruit and agriculture. Tobacco, vegetables, and pineapples grow prolifically, and many of the farmers carry on dairy-farming with considerable profit. With the advent of a railway, greater things could be done with these industries, and there is a prospect of a considerable business in timber-mining props being done as soon as a railway is constructed. Even now there is an excellent opening for such an industry, providing the cost of freight could be minimised. About half the land in the district is suitable for agriculture; most of that which is now used as grazing ground being quite suitable for agricultural purposes.

Near the sea the soil is of a sandy nature; further inland it assumes the character of a red chocolate loam, suitable for fruit trees, and is rich on the river lands, where it becomes almost

black, in some parts turning to red intermixed with sandy soil. Taking the land generally in the district it may be described as very good, and with the application of irrigation great yields might be expected from the cultivable areas. At present the value of the coast lands ranges from £1 per acre, according to locality, and for the inland flats and ridges from 17*s.* 6*d.* to 20*s.* per acre; the river lands being probably worth 25*s.* per acre.

The farmers say that oat-hay and maize are their best crops, but a considerable profit is made out of tobacco, which most of them seem to grow in varying quantities.

The average annual rainfall is 28·65 inches, and November is the wettest month in the year.

The latest partial returns from the division for a year show a production of 11,400 muids of wheat, 4,745 barley, and 585,110 bundles of oat-hay, and that there were in the district 4,486 ostriches.

There is a post-cart from Alexandria to Grahamstown, thirty miles.

This division has an area of 947 square miles, and contains fifty-six farms.

ALIWAL NORTH.

The town of Aliwal North, which has a population of 2,500, is situated on the Orange River, and is a terminus on the Cape Government Railway line; there is in the vicinity a good racecourse and a public park. The Roman Catholic, Wesleyan, and Dutch churches lead the way among the denominations. The population of the whole district is 5,600 whites and 6,400 blacks. There are sulphur springs that are beneficial to sufferers from rheumatism, and from cutaneous disorders. The climate of Aliwal is very suitable for consumptive patients. Stock-farming, agriculture, and fruit-growing are the staple industries of the place, and might be considerably extended, especially if irrigation could be applied. The soil is mostly deep, friable, sandy loam. Wheat is more extensively grown, without irrigation, than in Burghersdorp district or in the Karroo. All cereal and leguminous crops come on well. The principal products are oat-hay, potatoes, and wheat. Tree-planting as a business would be very remunerative.

Fruit-growing is attended with gratifying results to the

grower. One farmer planted 2,000 trees consisting of prunes, peaches, apples, pears, and nectarines. Among them are forty-two different kinds of pears, thirty-two of apples, thirty-two of peaches and nectarines, and seventeen of plums and prunes—all of which invariably do well with proper attention. Every tree mentioned on this particular farm will thrive without irrigation, although in most places occasional irrigation for apples and pears seems to be necessary.

March (the wettest month in the year) and April are good months for sowing all grain crops; wheat, planted then, invariably yields a crop. Soft wheat grows well without rusting, and the millers prefer it to the hard wheat. (It is noteworthy that barley and oats sown before Christmas suffer badly from rust.) Tobacco is grown, of a flavour and quality equal to that grown in Magaliesberg, Transvaal. It requires alluvial or spruit land; this crop, however, is subject to waste by the visitation of a hail-storm every year which is very destructive to tobacco, although it does not come to the same spot every year. Several farmers are growing the weed, and there is a large demand for it because of its similarity to the Transvaal tobacco, which is now difficult to get. About six farmers are growing it, each producing on an average, even under military restrictions, about 300 lbs. A good many are growing just sufficient for their own use—50 lbs. and so on.

Stock-farming is extensively carried on, the country being suitable for sheep and cattle.

New comers will find many friends willing to give them the benefit of their experience, and on calling upon the Civil Commissioner he will put them in touch with the right people.

The farmers in the district are loth to enter upon new ventures without first seeing the results, and consequently there has been, till lately, a general holding back for somebody to begin progressive measures, and make a departure from the old style. An instance is forthcoming upon this point. A well-known resident courageously started to make butter by the aid of a separator, and sold it on the local market. It at once became known derisively as "cream-separator butter," and the farmers chuckled and scoffed at it; nevertheless a penny a pound more was, from the start, procured for this butter than for any other, and eventually separator butter became so popular that now

every farmer in the district has a separator, and a large quantity of butter is turned out. Several model dairies are established in the district. So, with regard to new cultures and practice, when a start is made by somebody all follow as soon as they find that he succeeds.

There is considerable demand for the services of artisans. Those most in demand are journeymen for occasional work or those who can commence workshops on a small scale. A few blacksmiths, carpenters, masons and bricklayers, builders, painters and decorators are sure of employment in the town and district. The rate of wages is as high in this division as in any part of the Colony. The annual rainfall, about 27·28 inches, is not sufficient, unless the land is very absorbent and is carefully cultivated, and, even then, it is found desirable to have as much water in the dam as possible for irrigation. And here again, as elsewhere in the Colony, the farmers attach great importance to the impounding of water for irrigation purposes, upon which the future of the district largely depends.

With the exception of the occasional use of kraal manure, fertilisers are seldom, if ever, used in cultivation.

The values of farming land in the district range from 23*s.* to £2 per acre, according to quality.

Aliwal North, owing to its proximity to the Orange River Colony, has been the scene of military activity ever since the outbreak of the war. Great demands have been made upon the store-keepers and hotels, and the expenditure of military cash has filled many local coffers.

This reference to Aliwal North should not be closed without mentioning the experience of a representative farmer in the district, bearing upon the fertility of the soil. Manures are not generally or extensively used in the district. The farmer indicated ploughs the ground, on which a crop of wheat has just been stripped, as soon as the rains have soaked it, burying the straw with the grains that have fallen during the stripping. When these grow he allows the sheep to feed on them, thus getting a little urine and sheep dung spread over the land, which he finally finds in gratifying order for ploughing and sowing in April. Although he has not sown maize on a large scale, owing to the raids made on such a crop by the birds, he testifies to the prodigality of maize growth in such soil. For instance, he has

known one grain of maize yield eight stalks, and one stalk alone produce an ear which contained 2,828 grains, or 22,624 grains from one root. In December, 1899, he grew his best yield of wheat—viz., forty-six bags for one bag of seed. This may have been abnormal, but it shows the profitable nature of wheat culture in this district.

According to the last available annual return, there were produced in this district 1,218 muids of wheat, 1,581 of barley, 6,000 of maize, 2,500 of potatoes, and 260,940 bundles of oat-hay; and there were in the division at the same time 242,610 Merino and 1,754 Cape sheep, 21,554 Angora and 1,685 Boer goats, 423 stallions, 1,869 mares, 1,838 geldings, 300 mules, 100 asses, 800 bulls, 10,000 cows and heifers, 6,300 oxen, and 960 pigs.

Post-carts run from Aliwal North to Lady Grey, 36 miles, 8 hours; Herschel, 32 miles, 10½ hours; Palmietfontein, 60 miles, 20 hours; Jamestown, 35 miles, 7 hours; Rouxville, 25 miles, 4 hours; Smithfield, 45 miles, 8½ hours; Wepener, 80 miles, 14½ hours; De Wet's Dorp, 100 miles, 18 hours; Bloemfontein, 140 miles, 26 hours.

The area of the division is 1,305 square miles, and there are 236 farms.

BARKLY EAST.

The area of this division is 1,564 square miles. The principal town, Barkly East, about 82 miles south-east of Aliwal North, is situated in healthy mountainous country at an altitude of 5,831 feet. There are two hotels and a public library.

The average annual rainfall is 36·74 inches, and is usually sufficient for agricultural purposes. The district is noted for the breeding of stock, and a good deal of cereal and root crops are raised. Both stock-breeding and agriculture are capable of great extension, the climate and soil being particularly favourable. The best crops are oat-hay and potatoes.

Fully one-tenth of the superficial area could be profitably worked for agriculture, especially New England and the valleys of the Vaal Rock, Zadelboom, Longkloof, Sterkspruit, Bokspruit, Riflespruit, and Bell River, where cultivation could be almost indefinitely extended. The soil is very fertile, and consists mostly of a vegetable mould, rich in phosphates, with a subsoil of clay or gravel, capable of being worked for many years without

recourse to artificial fertilisers. Roughly estimated, 5,000 acres are cultivated without irrigation, and 1,000 acres are irrigated. It is doubtful whether irrigation is practicable on a large scale owing to the porosity of the soil, which renders it unsuitable for dam material. The value of the land varies with its nature and situation; according to the local Civil Commissioner £2 10*s.* per acre would probably be a fair average value for agricultural lands: some of the farmers assess the value of their land at from £2 to £5 per acre, unirrigated, and from £6 to £15 irrigable.

There are 356 farms in the division.

According to the last annual return 11,776 muids of wheat, 3,190 of barley, 1,300 of maize, 8,260 of potatoes, and 250,440 bundles of oat-hay were produced in the district; and there were on the farms 484,607 Merino sheep, 16,560 Angora goats, 1,514 stallions, 4,536 mares, 2,555 geldings, 1,100 bulls, 7,560 cows and heifers, and 4,100 oxen.

Post-carts run from Barkly East to Dordrecht, 66 miles; Lady Grey, 44 miles; Aliwal North, 72 miles; Malpas, 45 miles.

BATHURST.

The area of this division is 573 square miles.

The town of Port Alfred, situated at the mouth of the Kowie river in the Eastern Province, is beloved of holiday-makers and honeymooners.

Years ago the hopes of the Eastern Province were directed to the possibility of big profits in the near future from the Port, but those hopes have been cast down through the failure of the harbour works to ensure the passage of heavy cargoes through the bar. There is every reason to believe, however, that with the general progress of the Colony Port Alfred will advance proportionately. It is at present a flourishing little town, and a favourite holiday resort.

Full use is made by the inhabitants of the admirable public library. There is a Masonic Lodge and Recreation Association, and a good club for the leisured portion of the residents.

The average annual rainfall is nearly twenty-four inches.

The district is found in many places to be admirably suited for the growth of fruit trees, and of late years the farmers have

recognised this and proceeded vigorously to make the best use of their opportunities. At the present time there are upwards of 145,000 pineapples planted in the district, and 10,000 fruit trees of various sorts, all doing well. Among these are 2,320 good bearing orange and naartje trees, about 1,300 Japanese plums, 550 apricots, 1,760 apples, 600 peaches, 150 guavas, 150 lemons, 150 figs, 100 quinces, and 100 pomegranates.

Fruit-tree planting is still going on, and is extending to many large plots in the Kap and Coombs Valleys, which are particularly well adapted for fruit-growing. The best agricultural crops in the district are maize, oat-hay, and potatoes, and it may perhaps be said that already fruit-growing bids fair to become the staple product.

The soil is almost throughout the district of a light sandy and dark chocolate loam, of a friable nature. A good deal of the land is let out to small farmers on the share principle.

There are probably openings for new comers who will undertake the orchard business, and it seems probable that, looking at the progress the country is making, there are openings for tradesmen and the better class artisans whom we have mentioned in other pages. However, it will be an easy thing for intending settlers who may land at Port Elizabeth or East London to pay a visit and judge for themselves, and they are sure to meet with a hearty welcome from the good-natured folk in the district, who are usually glad to see new comers of the right stamp.

The annual yields of produce are, barley 2,429, maize 3,421, potatoes 5,014 muids, and oat-hay 262,072 bundles. There are also in the district 3,200 Boer goats, 190 bulls, 3,401 cows and heifers, 3,050 oxen, and 5,460 ostriches.

BEAUFORT WEST.

The area of this division is 6,374 square miles.

The township of Beaufort West is situated in the Karroo—on the railway line—339 miles from Cape Town, 2,792 feet above the sea, and contains a population of about 3,000. There are three hotels; a newspaper, the *Beaufort West Courier;* English, Dutch, Wesleyan, and Roman Catholic churches, and a few meeting-houses for other denominations; a town-hall, and a small theatre.

The climate is very helpful to invalids suffering from pulmonary complaints, and many such sufferers resort to the town and district. In the summer months they would do well to live outside the town at neighbouring farms, owing to the dust, which causes great inconvenience both to the healthy and the ailing.

There is a very meagre rainfall, annual average 9·82 inches, and consequently irrigation is the mainstay of the local farmers, who have the advantage of plenty of good soil. March is the wettest month.

The value of the land in this portion of the Karroo ranges from 2*s*. 6*d*. to 7*s*. per acre. Irrigable land is probably worth 10*s*. per acre and upwards, according to the water supply.

The best paying crops are wheat, potatoes, and lucerne.

The nature of the soil prevailing in the district is alternately stiff and friable, the friable land being loosened by a good admixture of sandy loam. Very few of the farmers use other than stable or kraal manure, and they all agree that, with irrigation at their doors, they could become very prosperous. One of them states that if he could get his large new dam full of water he could irrigate 300 acres of land, whereas, through the absence of wells and windmills, he cannot irrigate more than twenty acres, and, generally speaking, his complaint may be held to be typical. Most of the progressive farmers are ready to point out good positions for dam-making, and many of them can show with apparent certainty the likeliest places for boring operations.

The latest returns show the number of live stock in the division to be 333,178 Merino and 63,660 Cape sheep, 90,000 Angora and 37,000 Boer goats, 319 stallions, 1,900 mares, 1,200 geldings, 3,000 asses, 4,000 cattle, 5,000 ostriches; and the principal annual products 2,000 muids of wheat, 134,000 bundles of oat-hay, and 2,700 muids of potatoes.

A post-cart runs from Beaufort West to Slangfontein, sixty miles.

There are 281 farms in the division.

BEDFORD.

The area of this division is 1,225 square miles, and there are 202 farms.

The township of Bedford contains about 1,200 inhabitants,

Ross's Farm, Bedford, Located in a Dairying District.

and is situated near the base of the Kaga mountains, 2,450 feet above the sea.

The *Bedford Enterprise* newspaper is published here and is well up to its name. Dairy-farming is carried on extensively in the district. A local co-operative dairy company, which was started a little time ago, has already achieved considerable success, and there is plenty of room for new enterprises of a similar character. The town is only nineteen miles by good road from the railway line, and, consequently, produce grown in the district for export need not be eaten up by freight expenses. There is already erected in the district a good refrigerating store, and the farmers are alive to the importance of maintaining a steady market for green winter food for cattle. Silage is made here of maize, and is a very successful product both for home consumption and the market. Mangels, turnips, pumpkins, and lucerne have been grown, by the aid of irrigation, on the rich holmland of the Cowie Valley.

The most profitable crops are said to be lucerne and maize.

A flourishing business is done in dairying, fruit-growing, and lucerne cultivation, and there is no reason why bee-keeping, cheese-making, and bacon-curing should not be added to the industries of the Bedford division. Pigs are plentiful, thrive well, and multiply abundantly. The soil is very fertile, and would grow any kind of crop if irrigation on a larger scale were practicable.

A capable local authority assesses the value of the land all round at from 10*s.* to £1 per acre; some of the farmers state the value at from £1 to £2 per acre, and for irrigated land under lucerne from £35 to £100 per acre; and, looking at the profitable and enduring nature of a lucerne patch, in good soil and with water available, the price seems reasonable, especially when it is remembered that lucerne, no matter how long it may be in the ground, does not cause impoverishment, but on the other hand leaves the land rich in plant food, especially nitrogen. Here, again, in this district the outcry of the farmers is for good dams for water conservation. About 5,000 acres are cultivated, of which about 2,000 acres are supplied with water to some extent from constant-flowing streams, about 700 acres from perennial streams, and about 200 acres from storage dams. The last official annual report shows a return (*inter alia*) of 5,400 muids of maize and 277,320 bundles of oat-hay, and,

standing in the district, 122,804 Angora goats, 580 bulls, 13,100 cows and heifers, 5,750 oxen, 7,300 ostriches, 193,850 Merino and 8,650 Cape sheep.

There are limited openings in the district for farm hands. At present the prevailing wages of that class of labour are from 30*s*. to £3 per month, all found, but with the approach of better times and the probability that all such districts as Bedford will be earnestly opened up, it is not improbable that higher wages may soon prevail.

BREDASDORP.

The area of this district is 1,577 square miles.

Bredasdorp is the principal town in this division, 220 feet above the sea, and has a population of 600. There are English and Dutch churches and a library. Good shooting can be obtained in the neighbourhood.

The beach at Struis Bay closely resembles that of Muizenberg, and the waters near the shore swarm with excellent fish, among which are found large numbers of soles.

At present there are only about three boats employed in the fishing industry; these are badly manned and managed in the most primitive manner. There is undoubtedly an excellent opening here and on other parts of the coast for a fishing business, capable of great development, both at Struis Bay and at Wagenhuis Krantz, but more especially at the former; the only thing necessary being capital, accompanied by the necessary energy.

Within a few miles of the township there is an extensive salt-pan, from which an unlimited quantity of salt can be obtained for fish-curing. If the fish were cured in large quantities, small vessels could easily put in and load up cargoes.

Although there are large tracts of agricultural land, there is very little agriculture. A small quantity of tobacco is grown, apparently as an experiment, and a little irrigation is used for garden purposes. Wheat is subject to the usual rust scourge, otherwise it is the best paying crop; barley comes next. The soil is of a kindly, friable nature, and the value of the land is variously stated by the farmers to be from 10*s*. to 30*s*. an acre.

All the farm work is done by the farmers themselves, except for the help that is afforded by cheap native labour.

The rate of wages for ordinary white working men is about 5*s*. per day, but white labour is rarely employed, coloured labourers, at about 2*s*. a day, answering nearly all purposes.

There are 245 farms in this division.

The last annual return shows a yield of 11,700 muids of wheat, 10,770 of barley, 11,880 of oats, 1,000 of maize, and 365,825 bundles of oat-hay; and that there were on the farms 183,467 Merino sheep, 3,380 Angora and 14,534 Boer goats, 295 stallions, 1,330 mares, 1,300 geldings, 1,960 asses, and 2,040 ostriches.

The average annual rainfall is 17·11 inches, and May is the wettest month in the year. There are post-carts to Napier, 10 miles, 1½ hours; Caledon, 48 miles, 8 hours; Houw Hoek, 56 miles, 13 hours; Sir Lowry's Pass, 82 miles, 17 hours.

BRITSTOWN.

Britstown, situated thirty miles west of De Aar Junction, is the centre of a large and prosperous district with an area of 3,241 square miles, and an average rainfall of 13·51 inches per annum.

The population of Britstown is 460 white and 370 coloured people. The town is the seat of magistracy, and possesses a good hotel, bank, post and telegraph offices, and Dutch Reformed church. Water is supplied from a spring and reservoir just outside the town. The nature of the soil is brak, and only certain varieties of trees will thrive in this ground.

An extensive business is carried on in Britstown. Large quantities of wool skins and feathers pass through the place, and the post-carts to Prieska, Kenhardt, and Upington leave the town.

The district contains a population of 2,440 white and 2,460 coloured people. Stock-farming is carried on extensively, there being some 211,000 woolled sheep, 35,000 Cape sheep, 15,000 Angora and 28,000 common goats. In certain parts of the district, chiefly in the southern and south-eastern portions, there are some very fine properties, held by progressive farmers, who have improved their flocks, and expended considerable sums in constructing large dams and bringing considerable areas of ground under irrigation. The Smartt Syndicate have acquired

valuable properties, and immensely improved their farms by introducing the best breeds of sheep, erecting substantial fencing, and carrying out irrigation works on an extensive scale, thus bringing a large area of most fertile soil under cultivation. These farms constitute an object-lesson for the surrounding farmers, and the manner in which the operations are conducted cannot fail to have a beneficial effect in the neighbouring district. If irrigation works were undertaken by the Government—and there are many suitable places in the district where they could be carried out—there would be good openings for small agricultural farmers.

The last returns show that 1,256 muids of wheat and some 56,000 bundles of oat-hay were produced in the district.

CALÆDON.

The area of this division is 1,772 square miles.

Caledon township, 800 feet (population, 1,280), has an average rainfall of nearly twenty inches, May being the wettest month. The climate is a healthy one, and said by the medical faculty to be well adapted for the open-air treatment of consumptives, of which so much has been heard lately. The town is protected from cold winds by the Zwartberg and the Hartebeest mountains. The neighbourhood is a favourite one for sportsmen; antelopes, pheasants, partridges and hares, snipe, duck and other wild fowl being found in abundance in the mountainous districts and on the valley lands. Everlasting flowers and flowering heaths are gathered by the inhabitants and sent down to Cape Town for sale there. Large quantities of these flowers are sent abroad to Europe. The Caledon curative baths are famous in the Colony, and patients suffering from rheumatism, gout, kidney disease, and lumbago obtain quick relief, and often are completely cured by the bathing. The reputation of the baths has spread to other countries, and invalids from many parts of the world have sought and obtained relief at the Caledon sanatorium. A public company was recently formed for the purpose of enlarging the accommodation of the baths and generally developing the use of the medicinal springs.

A railway has just been constructed connecting Cape Town with the town, and now it is completed the district will undoubtedly

go ahead rapidly (so far as it is capable of development) owing to the attention which has been drawn to the place by its baths and the possibilities of extended cultivation.

Wheat, wine, brandy, wool, tobacco, and everlasting flowers are at present the staple products. Caledon has always been regarded as a successful wheat-growing district, but, like other places, it has its troubles with rust and other blights, pests, and nuisances. Probably, with the advent of the railway, lucerne-growing and irrigation will be pursued with considerable zest. Artificial manures are largely used with beneficial results. It is the opinion of local farmers that the general produce of the district will be increased many times over now railway communication is opened. Tobacco-growing and wine-making have made rapid strides lately. Some parts of the district are well adapted for dairying and fruit-growing, and here again these industries will be increased very much with the accession of the railway.

There are new openings for the manufacture of leather, as well as cart-building.

About two-thirds of the district is suitable for agriculture as distinct from pasturage. The price of good cereal land ranges from £1 to 30*s*. per acre, but as there have been no open sales of land of this description lately, it is difficult to ascertain present rates.

With the starting of the railway there will probably be good openings for produce merchants and nurserymen; and, at the present time, a few good artisans, such as masons, carpenters, blacksmiths, painters, and builders, might do well.

In most parts of the district the rainfall is found sufficient without irrigation. The soil is of a variable nature, consisting of sandy loam to a clayey loam along river banks and valleys, and of a more gravelly or stony nature along the hillsides. Potatoes and onions, where irrigation is possible, do exceedingly well, and so do vines on lands that are beyond the reach of irrigation waters.

There are 348 farms in this division.

The last annual return shows a yield of 38,324 muids of wheat, 17,160 of barley, 103,913 of oats, 1,248 of potatoes, and 52,852 bundles of oat-hay; and that there were on the farms 12,550 Boer goats, 289 stallions, 1,270 mares, 1,700 geldings, 2,060 mules, 3,230 cows and heifers, 2,230 oxen, and 6,800

pigs. There were also produced 1,011 leaguers of wine, and 343 leaguers of brandy.

Post-carts run from Caledon to Napier, 38 miles; Bredasdorp, 48 miles; Houw Hoek, 20 miles; Sir Lowry's Pass, 34 miles; River Zonder End, 40 miles; Storms Vlei, 50 miles; Villiersdorp, 40 miles; Grey Town, 27 miles; Hermanuspetrusfontein, 30 miles.

CAPE.

The visitor may gain an idea of the cash importance of Cape Town by passing the swing doors of the Standard Bank, Adderley Street, on a pay day. There he would find, at the counter of the banking chamber, a bustling crowd of excited people hugging bags of gold and rolls of notes and cheques; behind the counters the usual piles of bullion are guarded and manipulated by severe-looking tellers, assisted by many ledger-keepers; and back into the chamber, till almost lost to sight, are hosts of pass-book keepers, junior clerks, senior clerks, accountants and sub-accountants, managers and sub-managers, flecked here and there by flitting, gilt-edged messengers. Although many millions of pounds sterling come into South Africa for investment from all parts of the world, and an immense inland trade is carried on, four banks transact the bulk of South Africa's financial business, and it does not seem unreasonable to suppose that there are openings for one or two new institutions. Although proportionately less business is done by the other banks in the town, each of them has its like heavy turnover, and a bustling time on pay days. Insurance companies flourish in the city; one of them is much beloved of Dutchmen and managed by Englishmen and Scotchmen. Others are of English, Australian, New Zealand, and American origin, and each, as usual, vies with the other to show that the kith and kin of the insured derive the greatest benefit through its methods. In the principal business avenues there are the establishments of universal providers, where any article may be obtained from a doll's eye to a steam crane.

There are, even in Cape Town and its vicinity, a few things that settlers might concern themselves about if they did not wish to go further afield; for instance, any budding promoter might make money, and gain the affection of half the population

by forming a company for the establishment of extensive hot and cold baths, with a public washhouse and laundry where one's best white shirts would not be torn to shreds, nor our fine lace adornments made into window curtain material; it would add to the profits of the concern if a public swimming bath were included.

Then there might be a fruit and produce combination that would buy direct from the gardeners and orchardists and run a few shops of its own for retail business, so as to maintain moderate and uniform prices for fruit. Such a company could do an enormous business, both at home and abroad, by forwarding fresh and preserved fruit to suitable markets. In an Australian capital a resourceful resident, overtaken by hard times, started a circulating library on wheels. He purchased and hired a number of neat covered carts, fitted them with rows of shelves, and equipped each cart with a supply of the standard literature of the day and a catalogue. Having first advertised the project by an advance circular, he sent the carts into the different suburbs. The driver took his cartload of literature to every householder who looked like loving a book, and seldom failed to get a subscriber. The travelling library soon became a boon to the reading public, who appreciated the convenience of their library coming to them instead of their going to the library, especially on Saturdays and rainy days. In the absence in Cape Colony of municipal free circulating libraries there seems to be an excellent opening for one on wheels as described. There is an excellent opportunity for the man who will grow green fodder in the suburbs, make it up into small and large bundles, and vend it fresh for horse and cattle feed. He can begin with oat-hay and barley at once, and plant a few acres of lucerne, so that in a year or two he may have the king of fodder crops also ready for delivery with the milk. There are, indeed, a hundred and one things, great and small, that enterprising new comers could do, with small amounts of cash, in the Cape division. Poultry farming and market gardening, for instance, are capable of great extension, and with ready access to the Agricultural Department, where pamphlets and advice may be obtained, both as to the proper site for a farm and the right class of fowls to breed, there is no reason why failure should attend the efforts of the poultry farmer. That there is a good market for all that he and

the market gardener can produce no one can doubt who has lived in Cape Town a week. What an opening there is too for a "Carter Paterson" parcels delivery company; a system of collection and delivery that would have carts circulating through the avenues of city and suburbs from morning to night with the regularity of a post-office clock.

Cape Town, at the time these notes were written, was being gradually burnt to the ground, and some people were blaming the fire brigades. The writer witnessed the last big blaze, and observed that the efforts of the fire fighters left nothing to be desired so far as the earnestness and bravery of the men were concerned. Greater national encouragement, however, should be given to the brigades. Much of a soldier's enthusiasm arises from the national character of his calling, and, similarly, the fire brigades will improve by nationalising their work, and so raising their *esprit de corps*, instead of merely treating them as parochial institutions. A Cape National Fire Brigades Association would probably be well supported in this direction. It might soon have annual competitions and sports, with prizes for the greatest efficiency in brigade work, and, if the brigades possessed bands, a tuneful contest might follow sham fire fights, as is done elsewhere.

It is said that the difficulty to get good servant girls is as great in the United Kingdom as it is in South Africa. If it is so, Cape Colony's hopes may cool to zero. If, however, there are any domestic servants who want good situations and South African experience, they will find thousands of mistresses waiting for their arrival, ready to pay excellent wages.

The Cape division includes the important suburbs of Salt River, Woodstock, Mowbray, Rondebosch, Newlands, Claremont, Kenilworth, Wynberg, and Green and Sea Point; and, amongst others, the districts of Durbanville, Constantia—noted for its wines,—and Simonstown, the Naval Station of the Colony. These suburbs are delightful residential localities, being planted with trees, among which the oak is prevalent, and adorned with well laid-out gardens, so that the suburbs in hot weather are much less glaring and dusty than the town.

The last available annual return showed a yield in the division of 14,512 muids of wheat, 11,359 of barley, 6,401 of oats, 63,958 of potatoes, and 2,951,762 bundles of oat-hay; and there were at

the time in the district 32,844 Merino and 1,700 Cape sheep, 3,200 Boer goats, 660 stallions, 1,420 mares, 4,695 geldings, 2,352 mules, 9,527 cows and heifers, and 8,080 pigs. The return also shows a yield of 2,543 leaguers of wine, and 95 leaguers of brandy.

The average rainfall is 39·69 inches, the wettest month being June; and there are 121 farms in the division, which has an area of 663 square miles.

CARNARVON.

The area of this division is 6,301 square miles.

The town of Carnarvon has a population of 1,000, and stands at a high level on the upper Karroo shale, whence the country suddenly drops away northward 700 or 800 feet to the lower Karroo shale. The principal products of the division are wool and sheep, although considerable agriculture is done in wheat-growing and oat-hay. The whole surface of the major portion of the country is rocky, with only a few inches of surface soil, the only cultivable lands being in the valleys, covering an extensive area. Good arable land, owing to its scarcity, is said to be worth £5 an acre, providing it has water available for irrigation. The district is suited for the rearing of small stock and horses. The production of perishable foods on a large scale is avoided, owing to the difficulty and expense of transport.

The farm of Mr. E. G. Alston, who has gained distinction in the Colony through his successful efforts to introduce and popularise the salt bush, is in this district. As is well known, the salt bush of Australia is a valuable drought-resisting fodder plant, and settlers and the general public are recommended to apply to Mr. Alston and to the Agricultural Department, Cape Town, for supplies of the seed and for particulars relating to the propagation of the plant.

A progressive farmer pointed out an eligible site for a large dam on the Carnarvon Outer Commonage—viz., No. 1, at Rhenoster Poort; he explained that the work would be helpful to irrigation on a large scale, and cost but little. The site is about sixteen miles from the village of Carnarvon, at a point where the distance between two mountain ranges or hills is only about 300 yards. A quantity of loose stone is obtainable. There is a flow of water in rain time coming a distance of over

twenty miles which passes between these mountains. Below the passage or mountains fertile ground is obtainable, extending over twenty-two miles, not brackish, and running on a gentle slope from east to west. From north to south the ground is of the same nature and of about the same extent, but less sloping. Some erfholders still have lands on the above-mentioned ground, which they cultivate and sow whenever the river overflows its banks.

Mr. de Vaal also recommended a site for an irrigation dam at a spot about six miles from the village of Carnarvon, known as Zaaipoort, where the majority of the erfholders have their holdings. The formation is similar to that at Rhenoster Poort, and there are two ranges of mountains, through which runs a large quantity of water in rain time. The flow is as great, if not greater, than at Rhenoster Poort. The ground has a similar gradient from south to north, and can be brought under cultivation for over thirty miles. From east to west the area is much narrower. The distance between the two mountains where a dam could be constructed is about 700 yards. The soil is very good, not at all brackish, and has been under cultivation for many years. If these lands were flooded twice or thrice during the season good crops could probably be gathered, and the ordinary yield exceeded by at least 100 per cent.

The annual rainfall is a little over eight inches, and March is the wettest month.

The last annual return showed an average yield of 2,700 muids of wheat, 26,256 bundles of oat-hay; and, standing in the district, 107,760 Merino and 69,100 Cape sheep, 5,480 Angora and 18,775 Boer goats, 2,380 asses, 146 stallions, 865 mares, 941 geldings, and 630 mules.

Post-carts run to Victoria West, 80 miles; Victoria West Road Station, 88 miles; Kenhardt, 135 miles; Upington, 215 miles.

There are 236 farms in the division.

CATHCART.

Cathcart, the principal town in the division, contains a population of about 700, is situated near the Windvogel mountains—is on the Cape Government Railway line—and stands at an altitude of 3,906 feet.

The district may be divided into two portions. The western

part is all high mountain tableland, and the eastern very rough, rugged country, sloping down to the banks of the Kei River. In the first-named portion, good sour grass veld abounds, and the remainder is sweet grass. Agriculture is largely carried on in many directions. Wheat, oat-hay, and potatoes are the principal crops. Excellent potatoes grow in the Bontebok Flats. The district is well supplied with water rising in the mountainous watersheds. There are immense capabilities in the district for fruit-growing and dairy-farming, and new comers who are conversant with these industries will probably find suitable openings; it is a district in all points full of promise for new settlers, both of the tradesman, agricultural, and artisan classes. One of the finest orchards in the Eastern Province belongs to Messrs. Preston, who ship large quantities of fruit both to colonial markets and abroad every year. They are always willing to give information and advice to visitors. Crown land is valued at 10*s*. to 12*s*. 6*d*. per acre, but if purchases are made, as they must be, from the farmers, probably as much as 30*s*. per acre will be asked. Nearly all the land is held on quit-rent tenure, so that burden would have to be taken into consideration by the buyer.

The division is well suited for stock-farming of all kinds, and for horse-breeding, the horses bred in the district being of a very hardy and enduring character, owing probably to the hilly contour of the country, the roads in which are often very steep. It may be mentioned that Angora goats thrive well in some parts of the district, but Merino sheep-breeding has proved to be the most satisfactory industry.

Owing to the hilly nature of a large portion of the country, less irrigation is practicable than in other divisions of similar area; but with proper precautions in reference to water conservation, and the construction of suitable dams, that system of culture could be very largely increased.

The annual rainfall is over twenty-four inches, and November is the wettest month.

8,539 muids of wheat, 10,391 of maize, 23,528 of potatoes, 3,620 of oats, and 1,138,644 bundles of oat-hay were produced according to the last official annual return; and there were then 9,730 Angora goats, 9,858 cows and heifers, and 5,550 oxen in the division. One sheep to an acre is the proper average

for the grazing land, but sometimes the farmers overstock by placing more than double that number to the acre. The consequence is that the natural fodder plants are, in many places, trampled out of existence instead of merely being cropped down. Three hundred and fifty to 400 lambs, are, on an average, reared from 500 ewes. Many of the farmers shear every six months. The average weight of wool per sheep from a six months' clip is $2\frac{1}{2}$ lbs. to 3 lbs., and from a twelve months' clip double that weight, 6 lbs. being considered a good average.

There are 215 farms in the division, the area of which is 995 square miles.

CERES.

The area of this division is 3,874 square miles.

Twenty-five years ago the wheat crops of the Ceres district surpassed those of to-day both in quality and quantity. At that time the soil was virtually in a virgin condition, and rust unknown. An enterprising resident, Mr. Baumann, of the firm of Baumann & Co., started a new growth of wheat, which proved to be a first-class yielder, hard in the corn, and ultimately, when rust came, was found to be almost proof against its ravages. Mr. Baumann saved some seed from his new wheat, and distributed it far and wide in the district, and he still keeps a good supply for the use of anyone who wants it. This wheat became known as Wondercorn, and Ceres corn. As stated, the corn is very hard, and therefore makes fine flour.

Viticulture and horticulture are profitable and extensive Ceres industries, capable of very great extension, both by the present occupants of the land and by new comers; and the same may be said of tobacco-growing, which does well in the district.

Hitherto some English settlers might have failed to stay in Ceres and similar places because they did not understand the peculiarities of a community consisting so largely of Dutch and coloured people, whose habits of life and thought and business methods were unlike those of the dwellers in the British Isles. They might have become discouraged because the climatic conditions and methods of cultivation, the seasons and crops, the birds of the air and the grasses of the veld, were more or less strange; and, in beginning life under the new conditions, they would feel the chagrin of the embryo merchant,

fresh from school, who found that a purely academic system of bookkeeping did not meet the practical exigencies of the counting-house. And yet there are some Englishmen in this district, and others, who have grappled with the difficulties, and are found rejoicing that, after a year or two of experience, they are doing well for themselves and the community.

Prince Alfred's Hamlet, in the Ceres division, is one of the most promising viticultural areas in the Colony, and should be visited by those about to settle. This is a place brought into prominence through the enterprise of a certain farmer, who cut up his holding into small cultivable areas, and sold them to others, who are all doing well on their purchases. This tends to show that, by proper cultivation, it is as feasible to do well on a small area as it is on one ten times the size, upon which the owner can only cultivate a tenth part; an item of truth which does not seem to weigh much with hosts of Colonial farmers. The produce of Prince Alfred's Hamlet from the small farm holdings already realizes upwards of £9,000 per annum. This year, up to May, upwards of 400 lbs. of quinces for jam-making have been sent to the factories by one merchant in Ceres, and numerous others have sent large quantities of fruit from the same place. It is only reasonable to assume that what can be done there can be accomplished elsewhere under similar conditions; indeed, throughout the whole valley of Ceres, twelve miles long by ten miles wide, land lies idle to the right and the left that might soon become productive fields and orchards.

A farm called Schoen Vlei was held by a farmer for many years. The most he could make out of his holding of two hundred acres was £150 per year. Then came a new owner, imbued with the spirit of progression and money-getting, who improved the farm, planted vineyards, and tobacco and fruit-orchards, till by dint of vigilance and care a portion of his new possession was made to yield last season as much as fifty-five leaguers of brandy, worth, even at its present cheap rate, £1,100, and wine worth £300, besides grain, fruit and stock, altogether amounting to not less than £3,000; yet this farm is capable of increased cultivation to the extent of at least 400 per cent.

Another instance is that of a young farmer who bought 600 acres of land about eleven years ago for £750. This land, also,

is cultivated, and its productiveness might be extended quite as much as that at Schoen Vlei. Even in its present condition, owing to the new improvements and the fertility of the cultivated portion, it is worth upwards of £5,000 to the owner. He has made, this year, and delivered to a merchant in Ceres, thirteen leaguers of brandy, worth £260, about sixty leaguers of wine, worth £350, and other produce to the extent of at least £350. On one portion of his land he has begun an orchard upon which there are, among many other sorts, 1,000 apple trees just beginning to bear. His fruit, sent to Cape Town, brings the best prices obtainable, and he has arranged to import proper packing-boxes from abroad, so as to export his fruit with a minimised danger of bruising. Within the area of the land referred to, costing at the outset £750, and worth now in the market over £5,000, the owner has quite enough ground to make three more farms and orchards similar to those referred to.

Ceres is not alone in the possession of dead-head squatters of the Australian type on a reduced scale, and, nationally, the trouble is a serious one; the holdings are too large everywhere, and, until a remedy can be found for the evil, a large portion of the country will remain in its present languishing condition. The evil might be endurable if it were no worse than obtains in those parts of the Ceres district referred to, where the horse is whipped by such progressive farmers as the two that have been mentioned.

The district is so prolific and well protected from adverse climatic conditions by the mountains that surround it, that anything will grow well, and it is aptly said that, with the exception of sugar and coffee, Ceres might be shut off from the world, carry a big population, live well on its own productions, and supply the wants of the whole Colony.

The best wool in the Western Province is grown here, and the reputation it has gained abroad is always sufficient to ensure a better price in the open market than it would command if it came from any other place.

Cold Bokke-veld land situated at an altitude of 2,500 feet above the Ceres valley is the most suitable country for stock-farming, dairying, and grain-growing. All of these would pay exceedingly well if conducted by experienced men on proper lines. There is plenty of water and succulent, nutritious herbage.

In winter time the snow and frost on the Cold Bokke-veld compel the stock to seek a warmer zone, and so they trek down, for the lambing and calving season, to the Karroo, necessitating two abiding places for the Cold Bokke-veld farmer. This is an expensive experience that might be avoided by the erection of sheds on the Cold Bokke-veld for the protection of the animals, and the construction of silos for winter food. New settlers who go to the Cold Bokke-veld, where land is comparatively cheap and the prospects certainly inviting, will, it is hoped, profit by the suggestion.

Both in the valley and in the intermediate plateaux below the Cold Bokke-veld, citrus fruits are grown with great success, and large quantities of very fine oranges and lemons are sent to the market from Ceres.

In view of the immense demand at home and abroad for apples, it is not unlikely that dwellers on the Cold Bokke-veld will, ere long, awaken to the opportunities afforded them for apple-growing by the uniform low temperature that prevails during the season of winter rest, in contradistinction to the capricious alternations of temperature of the coast level. On these cool uplands the apple tree would not be forced into rapid growth and immature bearing. There are other parts of the Colony with Cold Bokke-veld lands that possess a similar temperature, and when fruit culture is better understood, the farmers of the high veld will probably grow and send away an immense and creditable apple crop to coast markets, even as Kent, Gloucester, Hereford, and Devon do in England; not to speak of the supplies they may send to the European markets when the fresh fruit is out of season.

Finely-ground bone-dust for manure is a sure cure for scale, the louse of the orange, because it is an excellent cleanser and a moderate fertiliser; whereas many manures that are applied to citrus and other trees are creative of filth as well as nutriment.

It is noteworthy that all cereal crops grow well in Ceres without irrigation.

There is an abundance of water in the town and district, the annual rainfall being considerable; for 1891 forty-two inches were registered.

Most of the nutritious herbage of the Colony is well distributed throughout Ceres. Since it became necessary to put the country

under military rule, industrial progress has been very much retarded, so that the total returns from crops and orchards may be less than usual. £35,000 is about the figure of the last year, made up mainly as follows:—

Fruit, £2,000; brandy and wine, £10,000; wheat, barley, and rye, £5,000; oat-hay, £7,000; poultry, £2,000; horses, £3,000; cattle, £2,500; wool, £500; sheep, £1,000. It is expected that these returns will, in the future, be increased at least six-fold. A scheme is projected by influential merchants interested in the district for the construction of an electric tramway from Ceres Road station to Ceres.

The value of warm Bokke-veld farm lands in the Ceres valley is from 25*s.* to £3 per acre, according to situation and improvements. Cold Bokke-veld farm lands range in value from 17*s.* 6*d.* to £2 per acre, and Karroo farms from 3*s.* 6*d.* to 15*s.*, according to situation and possibilities of irrigation.

The town of Ceres is approached from Ceres Road railway station by cart through Mitchell's Pass, one of the finest mountain passes in the Colony, which enables the visitor to obtain a good view of the magnificent surrounding scenery. Ceres itself stands at an altitude of 1,500 feet, and is a prettily laid-out town with many fine dwelling-houses and stores.

The last official annual returns show a yield of 13,090 muids of wheat, 6,000 of barley, 5,660 of rye, and 469,800 bundles of oat-hay; and that there were in the district 92,940 Merino and 12,860 Cape sheep, 19,268 Boer goats, and 2,670 pigs, with smaller numbers of stallions, mares, geldings, mules, asses, bulls, cows and heifers, oxen, and ostriches.

There are 229 farms in the division.

Post-cart to Ceres Road Station, ten miles, and to Bok River, forty-nine miles.

COLESBERG.

Colesberg, situated two miles from the Junction of the same name, is 307 miles from Port Elizabeth, and 607 from Cape Town. The town has a population of 807 white and 1,330 coloured people, and is the seat of magistracy, with post and telegraph offices, a branch of the Standard Bank, hotels, and churches. The average rainfall is 15·98 inches per annum, March being the month in which the most rain falls. The town

Alluvial Plain, North of Graaff Reinet—an Old Lake Bottom.
Enclosed by Mountain Walls. The cutting made by the Sundays River shows the depth of soil.

is surrounded by small stone kopjes, and is subject at times to most severe thunderstorms. The district of Colesberg has an area of 2,394 square miles, and a total population of 4,160 white and 5,790 coloured people. Pastoral and agricultural farming is carried on, there being some 226,731 woolled and 11,476 Cape sheep, as well as 45,077 Angora and 9,325 common goats. Some of the farmers can boast of very fine flocks, the breed of sheep being in certain parts very superior. The soil is exceedingly fertile, oats and wheat being the chief crops grown; most of the cultivated land is irrigated, but until more capital and enterprise are brought to bear in the construction of irrigation works thousands of acres of most fertile soil must perforce lie waste. Fruit grows luxuriantly, and could hardly be beaten in any part of the Colony. Cheese-making has been successfully attempted in this division. Horse-breeding has always been a speciality in this district, and the Hantam breed is celebrated throughout South Africa. There is a splendid opening in this part for enterprising horse-breeders.

The last returns show that 7,699 muids of wheat, 2,222 muids of barley, and 372,220 bundles of oat-hay were produced in the district.

CRADOCK.

There are 3,084 square miles in this division.

Cradock, a prosperous town and health resort—on the Cape Government Railway—181 miles from Port Elizabeth, and 2,856 feet above the sea, contains a population of 4,500. There is a very fine market-place in the town, graced, in the centre, by the Dutch Reformed Church, a substantial and elegant pile. There are also Episcopalian, Wesleyan, Baptist, and Roman Catholic churches. There is a good town-hall, with an extensive library, a private club, an excellent hospital, and prettily laid-out gardens. The *Midland News* and the *Register* are the local papers of the district, and have a very wide sphere of usefulness in the Colony. The climate is a healthy one, very suitable for persons affected by phthisis and asthmatical complaints.

Gold-bearing rock has been found in the neighbourhood, and a little free gold obtained, but not sufficient to justify development or extensive prospecting work.

The chief industries of the division are all branches of stock-farming and dairying. Cattle, sheep, goats, and ostriches thrive well in the district. Dairying is a very payable business, and, with stock-farming, is capable of considerable extension, both by the present residents and new comers.

A good business is also derived from the production of salt from salt-pans.

Almost all kinds of fruit grow plentifully, and a profitable export business is conducted by many growers.

The immediate commencement of any entirely new industries is not recommended, but the drying and canning of fruits may be begun without hesitation, and new orchards planted; and the breeding of Angora goats would be very likely to meet with success.

Roughly speaking, about one-third of the land is suitable for agriculture, but with a proper system of irrigation a much larger area could be utilised. Under present conditions scarcely any except the alluvial land in the river valleys is used for cultivation.

The soil nearly all over the district is rich and friable, but it requires a considerable quantity of water to make it steadily productive, and it seldom receives the necessary quantity.

The value of the land should average from 10*s*. to 20*s*. per acre, and the best alluvial irrigable soil from £5 to £15 per acre.

There are probably openings in the town and district for store-keepers, butchers, bakers, produce merchants, and live-stock brokers. But, of course, a look round in advance is recommended. A few capable artisans, such as masons, carpenters, blacksmiths and the like, who can either do ordinary journeymen's work or set up small workshops, can make good livings.

Some idea of the capacity of the district for stock-breeding may be derived from the fact that at the beginning of 1900 there were 450 bulls, 12,000 cows and heifers, 8,000 oxen, 9,000 ostriches, 360 stallions, 4,400 mares, 2,900 geldings, 180,260 Merino and 30,348 Cape sheep, 324,430 Angora and 6,500 Boer goats in the division.

The average annual rainfall is 15·15 inches, and January is the wettest month.

Post-carts run to Maraisburg, 40 miles; Tarkastad, 47 miles; Achter Sneeuwberg, 26 miles.

There are 452 farms in the division.

EAST LONDON.

The town and port of East London, a railway terminus, contains a population of between 13,000 and 14,000, and ranks third among the principal ports of Cape Colony. There is a good harbour, sheltering ships of over 6,000 tons. Half a million of money has been expended on this harbour, a first-class investment, and an asset which is always increasing in value with the growth of the country.

The *Despatch* and *Standard* are go-ahead, up-to-date, East London newspapers, circulating far and wide in the Eastern Province.

There are churches for Episcopalians, Lutherans, Presbyterians, Roman Catholics, Baptists, and other denominations. The public buildings are in keeping with the importance of the town. The educational establishments are all that can be desired, and there are several first-class clubs and hotels. Recreation grounds and a race course provide for the out-door sports and amusements of the public. The town possesses an electric tram service, and electric lighting is universal. There is an excellent water supply, the works in connection with which cost £25,000.

The surrounding scenery is very pretty, and for its general attractiveness and bracing sea breezes East London has long been the favourite seaside holiday resort for up-country folk.

The only industry in the district is an aerated water manufactory, and there are probably openings for many other industries. In particular a wool-washing and wool factory might at once be started with advantage.

About one-fourth of the land in the district is adaptable for agriculture. The soil generally is friable and loose.

There are, approximately, 120,000 acres of land under cultivation in this division, none of which is irrigated. Except for gardening purposes irrigation is not practised at all, but it is claimed by the farmers that it would be a great boon if irrigation could be applied to the land generally.

The area of the division is 682 square miles, and there are 472 farms.

The last official annual return showed a yield of 13,400 muids of maize, 2,960 muids of potatoes, and 422,618 bundles of

oat-hay; and that there were on the farms 17,937 Boer goats, 490 bulls, 6,020 cows and heifers, 6,960 oxen, and 2,400 pigs, with smaller numbers of other large stock.

FORT BEAUFORT.

The area of this division is 860 square miles.

The town of Fort Beaufort is situated at an altitude of 1,500 feet, on the banks of the Kat River, forty-five miles from Grahamstown. A railway will shortly be opened to connect the town with King William's Town and other places. There is a good water supply to the town, laid on by pipes and a furrow from the Blinkwater river. There is a good newspaper in the district, the *Fort Beaufort Advocate*, also two hotels and a public library.

The principal industry in operation at present is dairying, and, although a large quantity of butter is produced, the industry is capable of great extension, and should receive a considerable impetus through the completion of the railway mentioned.

Fruit-growers complain that there is very little, if any, market for their fruit, which does not pay to transport by waggon to a great distance. Fruit trees appear to thrive best in the Winterberg ward, and fruit-growers who are on the look out should keep an eye on this district, for there are sure to be openings when the railway is finished.

A great proportion of the cultivable land is suitable for fruit trees, and, with the opening-up of the district and facilities for transport, it is not unlikely that there will be good opportunity for the establishment of a factory for jam and preserve making.

The average annual rainfall is nearly twenty-two inches, and March is the wettest month in the year. It is not found that the rainfall is sufficient for agricultural purposes. If it were, there would probably be a greater development of this industry. The land appears to be well suited for the grazing of cattle and sheep. The soil is deep, and productive wherever water is available.

The price of land, according to the local Civil Commissioner, ranges from 10*s*. to 50*s*. per acre, according to locality and quality.

There are 173 farms in the district.

The annual yield of the leading products is 3,190 muids of wheat, 11,900 muids of maize, and 246,000 bundles of oat-hay; and, at the date of the last authentic return, there were 139,315 Merino sheep, 24,921 Angora and 7,300 Boer goats, 540 bulls, 14,000 cows and heifers, 6,300 oxen, 4,300 ostriches, and 1,600 pigs.

Post-carts run from Fort Beaufort to Alice, 14 miles, 2 hours; to King William's Town, 54 miles, 8½ hours; to Grahamstown, 45 miles, 8½ hours; Balfour, 24 miles, 5 hours; Seymour, 30 miles, 7 hours; Adelaide, 25 miles, 4 hours; Bedford, 42 miles.

FRASERBURG.

The village of Fraserburg, at an altitude of 4,200 feet, is eighty miles by cart road from Fraserburg Road railway station, on the main line. It contains a population of about 800, and is the centre of a sheep-breeding district. This is the only industry of importance at present in operation, and the country is most admirably adapted for it. Unlike the hard-baked soil of the Karroo, the Fraserburg soil is, in most parts of the division, a firm sandy loam.

The area of the division is 9,950 square miles, and there are 388 farms.

The district is entirely dependent upon the rains that accompany the summer thunderstorms. After these refreshing showers the country becomes quickly apparelled in a rich covering of grass, the crowning species of which is the Bushman grass—such a favourite with all veld stock. The sheep bred in the district are principally those of the Africander fat-tailed description, and are purchased by sheep buyers and sent to the railway line, in droves numbering from 4,000 to 5,000, for the butcher market. Some day, perhaps in the near future, this excellent tract of country will be used for the more profitable business of wool-growing. There are, however, over 100,000 woolled sheep in the district.

The soil is excellent for grain. A small quantity of wheat is being grown in the district, and will hereafter probably prove to be a profitable undertaking.

The Zak river, a tributary of the Orange, drains the western portion of the district, and depends for its flow on the rains of

the summer thunderstorms. Like most South African rivers, it comes down with great force, carrying with it volumes of fertilising fluid silt, which, being distributed over the lowlands, wherever the river spreads out into the flood water, leaves a deposit rich enough in plant constituents to enable the cultivator to dispense with manure for years to come. A systematic advantage has been taken of this property of the Zak river by proprietors of lowlands adjoining the river banks, who, by building weirs or dams in the rocky beds of the river, are able to lead off the silt-laden water in the furrows to the cultivated lands. The results have been encouraging in the extreme, and only capital and easy transport facilities, such as light railways, are required to develop this industry into important proportions. Systematic investigation of the levels and other details are necessary before it can be ascertained to what extent these lands can be cultivated, but the quantity of land that is available for agricultural purposes is doubtless very large, although small in proportion to that suitable for pasturage.

Throughout the district there are outcrops of limestone, and in many places the rubbly *débris* on the surface and in the subsoil contains a considerable proportion of limestone.

The price of land varies greatly with the water available for pastoral or agricultural purposes, but it is estimated that between 4*s*. and 5*s*. per acre is a fair average value.

It is important to notice that the presence of copious supplies of underground water has been proved, and springs are believed to exist all over the district, although hitherto very few farmers have taken advantage of the discovery. They are now going in largely for wells and bucket pumps.

In Williston, seventy-two miles north-west of Fraserburg, good water is obtained from a bore hole put down in the public street at a depth of ninety odd feet.

With the restoration of peaceful times, and the determination on the part of the community to make the best of Nature's bounties, it seems highly probable that artisans of the following classes will at once find ready employment in such districts as Fraserburg.

The wages paid to white workers are as follows :—Masons 10*s*., carpenters 10*s*., saddlers 12*s*. 6*d*., painters 10*s*., stonecutters 10*s*. 6*d*., tailors (bush-veld) and shoemakers 10*s*.,

tinsmiths 12*s.* 6*d.*, waggon-makers 12*s.* 6*d.*, and blacksmiths 12*s.* 6*d.* per diem.

The last official return showed a yield of about 3,000 muids of wheat and 20,840 bundles of oat-hay, and smaller quantities of other crops; and that there were in the district 107,495 Merino and 139,650 Cape sheep, 34,752 Boer goats, 2,625 asses, and smaller numbers of other large stock.

Post carts run to Fraserburg Road Station, eighty miles; and to Williston, seventy-two miles.

GEORGE.

One of the most beautiful parts of Cape Colony is the town and district of George. The town contains upwards of 2,400 inhabitants, and is adorned with old but stylishly-built residences, surrounded by well-kept ornamental gardens; and the wide handsome streets, planted with thickly foliaged oak trees, give an appearance of thoroughness and stability to the place that is in keeping with its reputation.

The aspect of the surrounding country is also very attractive, especially in spring and early summer, when the valleys and mountain slopes are covered with verdure and flowers in every direction. The climate is said to be good for consumptive patients. In the town there are a good Public Library, hotel, and boarding-houses, Roman Catholic and Dutch places of worship, and a cleverly conducted newspaper, that keeps the district alive with local and general news. Besides agriculture and horticulture, which are of course the staple industries of the district, boot and shoe manufactories and tanning companies do a thriving business and send their wares to all parts of South Africa. Tree-planting and ostrich-farming are also trade features of the district, and are capable of extension by new comers. The country and soil seem well suited for the cultivation of the sugar beet, and it is the opinion of residents that a combination could be formed to start in the only safe way—*i.e.*, by the formation of a strong financial company for the putting up of elaborate machinery and plant; but it is improbable that this will be accomplished till the district is more thickly populated. There are openings, however, for the manufacture of artificial manure, and a good saw-milling business.

The area of this division is 979 square miles, and there are ninety-four farms.

Probably one-sixth of the land in the district is suitable for agriculture. Near the Outeniqua range of mountains the soil is rich and loamy, while to the south it is comparatively poor, but responds plenteously to generous treatment. There are, it is believed, in the town and district, several good openings for tradesmen, such as general store-keepers, butchers, produce merchants, nurserymen, and stock-breeders, who thoroughly understand their business. The latter point needs the most weighty emphasis that can be used, for too often new businesses are opened and collapse through the incapacity of the projectors. First and foremost is the inability or indisposition to understand or learn the local conditions that make for the successful conduct of the business in a new community, largely made up of people who can barely utter a few words of English, and whose methods and habits are altogether different to any that the average English tradesman has been accustomed to. In the town and immediate neighbourhood of George itself the majority of the inhabitants speak English, but most of the residents are either Dutch or of Dutch extraction. Let the tradesman who opens a business employ trustworthy assistants who are either Dutch themselves or thoroughly conversant with Dutch folk and their habits of thought and business methods, and let him put into his business a full stock of the best capital he can carry—namely, civility and patience—and, with industry and a small cash capital, he cannot fail to succeed.

If the land can be obtained by the settler at from 25*s.* for unirrigated and cultivable land to 35*s.* per acre with irrigation, or at any price near those figures, agricultural settlers might be recommended to pay a visit to this district.

The average annual rainfall is 24·18 inches, and March is the wettest month.

The last official annual return showed that among other crops there was a yield of 4,356 muids of wheat, 2,720 of barley, 3,926 of maize, and 498,850 bundles of oat-hay; and there were in the district, among other live stock, 30,541 Merino and 1,580 Cape sheep, 6,400 Angora and 15,360 Boer goats, 3,580 cows and heifers, 3,480 oxen, 5,400 ostriches, and 2,380 pigs.

Post-carts run to Mossel Bay, 33 miles; Avontuur, 56 miles;

WELLWOOD FARM, IN THE MOUNTAINS NORTH-EAST OF GRAAFF REINET.
Entirely developed by Surface-water collected in Dams.

Humansdorp, 145 miles ; Port Elizabeth, 195 miles ; Riversdale, 89 miles ; Swellendam, 150 miles ; Oudtshoorn, 41 miles ; Prince Albert, 85 miles; Prince Albert Road Station, 113 miles; Balmoral, 40 miles ; and Knysna, 52 miles.

GRAAFF REINET.

The town of Graaff Reinet is situated on the railway line, and stands at an altitude of 2,500 feet, 185 miles from Port Elizabeth. The area of the district is 2,692 square miles. The town has a white population of 3,400, and about the same number of coloured persons. The whole population of the district is over 19,000, of whom 12,000 are coloured. It is the largest and oldest town in the Midlands, and is situated close to the Sundays river, which has its source in the Sneeuwberg mountains. There is a plentiful supply of water, and it is much used by the inhabitants for irrigation. Consequently all kinds of garden produce are plentiful, and the gardens, orchards, and trees that meet the eye everywhere have a very pretty effect as the visitor enters the town from the dry outside desert in the height of summer.

The district may be divided into two fairly equal parts, the northern or mountainous portion consisting of grass veld, and the southern or low country being what is termed "gebroken," or mixed grass and Karroo bushes. The soil is extremely fertile, and produces large crops of wheat, barley, oats, potatoes, and lucerne. Grazing ground is valued at from 10*s*. to 15*s*. per acre, but choice arable land fetches very high prices. Much of the cultivated ground is under irrigation, and of late years large tracts of the most fertile soil along the banks of the Sundays river have been placed under lucerne. Farmers are now beginning to realise that artificial feeding pays handsomely, and that the increased prices obtained for stock fattened on lucerne more than compensate for the loss of cereals. Most of the farms are enclosed with substantial wire fences, and in some parts this has been supplemented with wire netting to render the enclosures and paddocks jackal proof. Fruit, especially peaches, figs, apples, pears, and citrous kinds, grows exceedingly well, and large quantities are sent by rail to Port Elizabeth. In the town of Graaff Reinet and the country immediately surrounding it

grapes of very fine quality and flavour are produced. Climate and soil are, as a rule, on the side of the fruit-grower ; and, with the exception of an unseasonable frost or an occasional hailstorm, there is nothing to prevent the industry being enormously increased, and a flourishing export trade carried on.

In some parts of the district, especially on the south-eastern border, many of the farms are overrun with Prickly Pear (Opuntia), which has practically rendered valueless large areas of most fertile ground. Some farmers have spent large sums in the endeavour to eradicate this pest, but until compulsory legislation is introduced the country will never be thoroughly cleared. Various methods have been tried to eradicate the prickly pear, such as cutting down the bushes, taking out the stumps, and carting them away into heaps to dry in the sun, when the piles are destroyed by fire. Others, again, attempt to inoculate the branches and stems with arsenic or some other poison ; but the most successful method appears to be cutting out the bushes, collecting them in heaps, and sprinkling the whole with Scrub Exterminator.

Angora goats thrive exceedingly well in the mixed veld, and some of the finest bred flocks in the Colony are found in this district. Merino sheep are kept in considerable number, especially on the mountain ranges, and large sums of money have been expended by the progressive farmers in the introduction of the best breeds of Angoras and Merinos. In this respect the late Mr. Rubidge, of Wellwood, accomplished more than any other farmer in the country by improving his flocks with the best blood to be obtained from the Rambouillet flocks of France. Ostriches are also kept in considerable numbers, and along the Sundays river magnificent feathers are grown.

Adendorf, a suburb of Graaff Reinet, is remarkable for the fertility of its soil and the excellence of the fruit and vegetables produced.

New Bethesda is a small village thirty miles north of Graaff Reinet, and fifteen miles from the station of Bethesda Road, on the Middelburg-Graaff Reinet line of rail.

Petersburg is a hamlet thirty miles east-south-east of Graaff Reinet.

Taking the district all through, there are few parts of the Colony better adapted for all kinds of farming. The dairy

industry, although it has been started on small lines, is still in its infancy, and affords grand possibilities for any man possessing capital and enterprise. Market gardeners will also find abundant scope, and a profitable market. Agricultural labourers will always be in demand, and some of the land at present overrun with Prickly Pear could doubtless be obtained at low rates, and with capital and energy the ground, once cleared, would prove a valuable investment.

The district is well suited for horse-breeding, and the casual visitor cannot help being impressed by some of the handsome draught horses seen in the town and district.

Angora goats are very numerous in the district, and very good mohair is produced from the fleeces.

The district produces, according to the last available annual return, about 6,700 muids of wheat, 2,400 of barley, 1,284 of maize, 10,995 of potatoes, and 432,300 bundles of oat-hay; and there were at the time of this return 193,682 Merino and 41,363 Cape sheep, 215,549 Angora and 15,132 Boer goats, 271 stallions, 2,347 mares, 1,365 geldings, 380 bulls, 6,503 cows and heifers, 5,532 oxen, and 8,294 ostriches.

The annual rainfall is 14·87 inches, and March is the wettest month in the year.

Post-carts run to Murraysburg, 55 miles, 11¼ hours; Biesjes Poort Station, 101 miles, 20¼ hours; Pearston, 49 miles, 9 hours; Somerset East, 78 miles, 31 hours.

There are 245 farms in the division.

HANOVER.

Hanover is a small town of 800 inhabitants, stands at an altitude of 4,500 feet, and is nine miles from the Hanover Road railway station.

Stock-farming and grazing are the leading industries.

"Late sowing and reaping for poor crops (such crops being often sown between the first week in January and the first week in February) usually result in straw, and not grain. It is interesting to note that 120 loads of sheep-kraal manure to the acre (Scotch-cart loads, the size of the carts being 4′ 9″ × 2′ 9″ × 2′ 3″ × 1′ 4″, filled to the utmost) are found to be sufficient for a rotation of potatoes, wheat and oats; after this, manure is

usually applied again, unless the ground is still fertile, when, of course, less manure, not exceeding eighty loads to the acre, is given. If the ground is still too rich to stand eighty loads, it is not manured at all. The cost of applying the manure, without reckoning the wear and tear and mules, but merely allowing for labour, is about 3*d.* per Scotch-cart load of sheep-kraal manure, unless a considerable distance separates the land from the kraals. Including wear and tear and mules, about 6*d.* per load would be the cost, but as potatoes are usually planted after manuring, the expense of laying the land fallow for seven or eight months has to be added, and this ultimate cost would probably be within £1 per acre." This information was elicited from a farmer in course of conversation.

Another farmer said his farm would be greatly increased in value by the construction of dams. There are two such dams partially constructed and remaining uncompleted through lack of workmen, and at the time these memoranda were written there seemed no possibility of getting dam-makers. He has about fifty acres under cultivation without irrigation; he does not always sow the whole fifty acres in one year, but utilises from thirty-five to forty acres, allowing ten to fifteen to remain fallow. Potatoes are his best and most profitable crop; he has had as much as 110 bags to the acre.

The area of the division is 2,082 square miles, and there are 150 farms.

The last official annual return showed, among other crops, a yield of 2,960 muids of wheat, 3,860 muids of potatoes, and 177,485 bundles of oat-hay; and that there were in the district 186,053 Merino and 5,900 Cape sheep, 25,520 Angora and 7,755 Boer goats, and, among other large stock, 1,430 mares, 1,000 geldings, about 2,000 cows and heifers, and 2,150 ostriches.

A post-cart runs to Hanover Road railway station, nine miles.

The average annual rainfall is 14·69, and March is the wettest month.

HERBERT.

Douglas, in the Herbert division, affords a good example of the benefits of irrigation so far, at any rate, as the value of land

is concerned. At this little place a furrow was constructed by the Government, some time ago, to convey water for irrigating some 9,000 acres. Previous to the commencement of the works good land was readily parted with at about £3 per acre, but the completion of the canal sent up the value to close upon £30 per acre, and some of the land has since fetched twice that figure.

The area of the division is 2,763 square miles.

The district itself is naturally a stock-raising one, and, compared to the extent of the division, very little cultivation has been done, owing, probably, to the apathy of the population, a lack of even a rudimentary knowledge of agriculture, and the fact that stock-farming entails less work and pays far better.

The average annual rainfall is 14·44 inches, and March is the wettest month.

The distance from a market and the difficulty of transport to and fro is also a drawback, although, in the absence of evidence of the disposition of the people to raise heavy crops, it is difficult to say whether a demand for a railway is justified or not. As a rule the yield from any crop is insufficient for even local requirements, surely an inexcusable condition of things. The insufficient rainfall and lack of irrigation account for a further lapse, the absence of rain being especially depressing. A few farmers have small gardens and plots of land which they irrigate from their dams; they grow a little produce for their own consumption, but the only agriculture carried on extensively is that referred to at Douglas, where about 400 acres, sold by auction to the holders in five to ten acre plots, are already under irrigation there from the works mentioned. Between 200 and 300 acres, unirrigated, are under cultivation. With the exception of two or three instances the land in the district is held by the *by-woner* class, who scratch the surface, grow the same crops year in and year out on the best portion of their land, and leave the rest uncultivated. Only two or three progressive, up-to-date men produce any real crops, and they compare favourably with any in South Africa—oat-hay, potatoes, and wheat especially. Fruit is produced in small quantities, and the size and quality cannot be surpassed.

If the Douglas irrigation scheme cannot yet be pronounced a success, the reason probably is that the wrong class of men have obtained possession of the land owing to the easy terms provided

by the Act under which it is granted. The evil might be lessened and the success of the scheme enhanced if means were taken to instruct the men what manures to use and how to use them, what crops to grow and how to till them.

The Douglas furrow could easily be extended, and if the scheme of the Public Works Department to construct a second furrow at a level of fifteen or twenty feet above the present one were carried out, an additional 400 or 500 acres of the best land will be irrigable. The supply of water is plentiful, and if the right class of men were to settle, excellent returns would be probable.

There are 197 farms in this district.

As it is elsewhere in the Colony, the growth of population in this division will send agricultural pursuits ahead, till they become much more general. At present the man with a large farm must devote it principally to stock-breeding so as to make a living.

Most of the soil in the district is stiff, and, after the application of irrigation water, assumes the consistency of cement, so that frequent cultivation is necessary. The farmers find that by using a mixture of straw and manure for fertilising, the obstinacy of the soil becomes much modified.

The last annual official return showed that, among other crops, there was a yield of 128,795 bundles of oat-hay; and that there were in the district 80,690 Merino and 24,288 Cape sheep, 11,529 Angora and 49,865 Boer goats, and, among large stock, 4,570 mares, 6,500 cows and heifers, 3,340 oxen, and 1,670 ostriches.

Post-carts run from Douglas to Belmont station, 48 miles; Campbell, 20 miles; Griquatown, 40 miles.

HUMANSDORP.

The town of Humansdorp is situated at an altitude of 360 feet, and contains a population of 600. There is an abundant water supply for township purposes. There are Dutch and English churches, two hotels, and a good newspaper. The climate is very healthy. There is excellent sport in the neighbourhood among wild duck, partridge, and buck. The total population of the district is probably from 24,000 to 25,000. A railway line in connection with Port Elizabeth is shortly going through the division.

The average annual rainfall is 30·27 inches.

Grain culture and ostrich-farming, fruit-growing and wood-cutting, are the principal industries. There is also some sea fishing and curing at Jeffrey's Bay; these industries might be considerably extended by anybody who understands them. Grain culture is almost limited to oats and maize on the unirrigated lands. The crops are usually good, and in ordinary seasons abundant.

Sheep-farming and wool-growing have much decreased lately owing to the depreciation of the pasture on what is known as the Zuur veld. One farm, which formerly carried 4,000 sheep and goats, besides horned stock, now barely supports 1,500 sheep.

The deterioration is asserted to be due to the burning of the veld, the good grass succumbing and the coarser kind and the useless bush surviving.

There is, however, a fairly good water supply and other natural advantages for stock-breeding. It seems, therefore, highly desirable that some effort should be made to cope with the depreciation of pasture; probably the sowing of the burnt and depreciated lands with zout bosch (Australian salt bush) would be an important step in the right direction. The Agricultural Department has, at present, a supply of seed, and, should this be insufficient, it would not be difficult to get an unlimited quantity from Australia. Anybody requiring a supply of Australian salt bush should apply to Mr. Tabart, Secretary to the Council of Agriculture, Hobart, Tasmania; or to the Secretary for Agriculture, Agricultural Department, Sydney, New South Wales, Australia; and to Mr. E. G. Alston, Carnarvon,

Australian Salt Bush.
A. nummularia, Lindl.—(The Male Plant).

Cape Colony. The best sort is obtained from New South Wales, and the applicant should always ask for the small hardy salt cotton bush, the only sheep-feed on the great plains from the Murrumbidjee to the Darling.

Ostrich-farming pays well on the coastal portions of the division, and even better in the Gamtoos river valley.

Fruit culture is yet in its infancy, but well beyond the experimental stage, and rapid strides on right lines are being made in several parts of the district. The planting of oranges and apples is receiving most attention. There are splendid orchards of citrus trees in the district, large quantities of the finest oranges being sent to the Port Elizabeth market. It is expected that an impetus will be given to fruit-growing and the general business of the district by the construction of the railway referred to. This is particularly applicable to the wood-cutting industry in the Zitzikama forest, cheap transport by railway being the essence of successful wood-cutting business.

In Humansdorp about 1 per cent. of the land is under cultivation, and everybody agrees that this will be immensely increased by the application of irrigation. Unfortunately the rivers in the district flow over very deep beds, so that water-lifting, except it be carried on on a large scale aided by capital, is almost out of the question for the small farmer. There are, however, immense tracts of good arable land on both banks of the river. In some places the river forms itself into large pools of considerable depth. If works could be constructed in the neighbourhood of the deep portions of the river for the purpose of making flumes and pumping the water therein for reticulation on the cultivated areas, the quantities of mealies, potatoes and other root crops that could be produced, would be very great.

There is, comparatively speaking, little soil in the district that is not fertile. The red friable kind is most general, and black soil, mixed with pot-clay, is prevalent, the latter being most suitable for fruit culture. The soil in the Zuur veld is principally of a sandy nature.

Good unirrigated cultivable lands are probably worth approximately about £3 15*s.* per acre, and irrigated lands about £12.

When the railway is completed there are sure to be openings

in many places for general store-keepers, butchers, produce merchants, nurserymen, stock-breeders and poultrymen, but principally for producers.

There are a few openings for capable men of the artisan class, such as blacksmiths, carpenters and builders, and for farm hands. With regard to the latter it is probable they would have to make terms on the spot with their employers, as the prevailing rates of wages for white labourers (the ne'er-do-well class, known as the poor whites) are so small as to be no criterion of the value of services of a capable white new chum.

Conversation with the best informed farmers in the district elicited the fact that for the best kind of land, irrigated, about £10 per acre would be a fair purchase price, and about £2 per acre for ordinary land. The soil is estimated to be about three parts friable and one part stiff, and potatoes, mealies, tobacco, fruit, and rust-resisting oats thrive well, wherever grown, as do most root crops.

The area of the district is 1,950 square miles, and there are 158 farms.

The last annual official return showed (*inter alia*) a yield of 5,140 muids of wheat, 3,340 of barley, 3,600 of oats, 8,940 of maize, 2,185 of potatoes, and 754,432 bundles of oat-hay; and that there were in the district 66,122 Merino sheep, 3,750 Angora and 9,180 Boer goats, and, among the larger stock, 5,980 cows and heifers, 5,560 oxen, 5,830 ostriches, and 2,090 pigs. This return was a partial one.

There are post-carts to Port Elizabeth, 50 miles; Avontuur, 95 miles; George, 145 miles; Hankey, 20 miles.

JANSENVILLE.

The area of this division is 1,923 square miles, and there are 266 farms. The village itself contains a population of about 600, and is twenty-two miles from Mount Stewart railway station. There are about 10,000 acres of land under cultivation and partly irrigated.

The average annual rainfall is 9·46 inches, and January is the wettest month.

With proper water conservation it is the opinion of farmers in the district that they could utilise much greater areas of

land. The prices asked for irrigable land range from £10 to £15 per acre. Along the banks of the Sundays river the soil is most fertile, and large crops of maize and oats are produced, the returns in most cases being exceptionally large.

Lucerne is grown and flourishes.

According to the last official annual returns the yield of oat-hay was 193,770 bundles; and there were in the district 18,100 Merino and 11,240 Cape sheep, 310,901 Angora and 9,130 Boer goats, and, among the larger stock, 3,540 cows and heifers, 3,000 oxen, and 5,800 ostriches.

Post-carts run from Jansenville to Mount Stewart station, twenty-two miles.

KING WILLIAM'S TOWN.

King William's Town, or "King," as it is called locally, is an important town situated on the banks of the Buffalo river, in the vicinity of the Amatola mountains, and on the Cape Government Railway line. Comparatively speaking the political disquiet that has prevailed elsewhere in the Colony has happily been almost entirely absent here.

The town is well provided with hotels, public buildings, churches, pleasure gardens, recreation grounds, and public baths. It is situated 1,270 feet above the sea, and contains a population of over 8,000. The religious bodies comprise Anglican, Presbyterian, Wesleyan, Roman Catholic, Lutheran and Baptist, and the Masonic Order possesses two halls.

The Grey Hospital was erected by Governor Sir George Grey, and, besides proving a much needed boon to the civilised community, has the historical distinction of having, by the efficacy of its Dispenser's prescriptions, acted as a political cure in breaking the power of the native witch doctors over the native tribes in the locality.

With the Anglican Grammar School, Collegiate Girls' School, the Church School, the Free School, and the Roman Catholic Convent Schools, every provision has been made for the efficient education of the rising generation of King. There is an abundant water supply in the town and suburbs, regulated by works that have cost the municipality £35,000.

An extensive trade is carried on with the Native Territories in the neighbouring districts, the population of which numbers

over 120,000. A close connection with the town and district is maintained by the local merchants, many of whom reside at East London, a few miles away, and large quantities of produce are sent to that port for consignment abroad.

The industries of the place comprise the manufacture of railway sleepers, waggons, coaches, carriages and carts, boots and shoes, saddles and harness, soap, candles, matches, oil, paint, sweetmeats, aerated waters, furniture, drugs, linen, syrup and lime juice, clothes, trunks, doors and windows for huts, and other native requisites. There are steam and water mills, wool-washing and pressing works, a tannery, chicory factory, iron foundries, machine shops, military tailors, blacksmithing and farriering, process engraving, steam printing, bookbinding and ruling, and tinsmithing. A flourishing timber trade is also carried on, and orange, tobacco, and gooseberry culture, dairying, stock-breeding, wattle-growing, and other forms of rural industry. Very few of these businesses are pushed to their fullest extent, and many of them are capable of considerable extension, not only by the present population, but by new comers. There are large forests in the district, and wood-turning and the preparation of waggon wood are industries that are probably worth the attention of new comers who may have the ability and means to undertake the business. The area of this division is 1,273 square miles.

In the opinion of the Civil Commissioner and other well-informed local residents, brewing, paper-making, bent-timber manufacturing, woollen blankets, tobacco and snuff-making, cleaning and dyeing, glue and artificial manure manufacturing, especially bone-meal and by-products, fruit-growing, jam and preserve making, garden and oil seeds (such as castor oil, sunflower, and peanut), oil-crushing, pig and poultry farming may be begun by new comers with a great probability of success, providing they themselves are capable of carrying on business.

The average annual rainfall is 35·04 inches, and January is the wettest month in the year.

A very large proportion of land in the district is suitable for agriculture, in the proportion of one acre in ten in some parts and one in twenty in others approximately, but a large portion is required for pasturage, while a considerable area is reserved for forestry. The soil in some parts consists of very

rich red and black loam, in others it is light and sandy, dark brown and heavy in the valleys, and on the river banks is found in patches of red loam.

Experienced farmers place the better quality of land as high as £10 per acre, but probably the real approximate average value, varying according to the nature of the soil, ranges from 15*s.* to £4 per acre.

Nearly all the work on the farms is performed by natives. Here and there in the surrounding district masons and carpenters are wanted for odd jobs. There does not appear to be any need for new shopkeepers, but stock-breeders and nurserymen would find openings, so would bricklayers, painters, and tinsmiths. There are immediate openings for capable workmen in all departments of the building trade, and in the blacksmith and tailoring trades.

The rate of wages for factory hands is from 8*s.* to 12*s.* per day; female shop-assistants receive from £6 to £7 10*s.* per month. Natives on the farms are paid from 5*s.* to 15*s.* per month, with food and lodging.

As an illustration of the manufacturing capabilities of King, the chicory factory belonging to Mr. Salomon may be mentioned. The factory was begun on a small scale in 1895; more commodious premises have been erected, and machinery of forty horse-power turns out weekly between ten and twelve tons of chicory, as well as running an extensive coffee-roasting plant, and grinding mealies and wheat. The process of chicory-making is very interesting. The farmers in the neighbourhood grow the chicory root which supplies the factory. After it has been washed and cut up it is taken to the drying-room adjoining the factory, placed in kilns, and, when perfectly dry, is removed to cylinders in the factory and subjected to the same roasting processes as ordinary coffee. When this is done the roots are cooled and ground to fineness in a mill.

The prosperous position of King William's Town is shown by the facility with which the recently formed electric lighting and cold storage scheme was floated in the locality. The capital is £24,000; £12,000 in cash was immediately raised locally and the remainder of the capital guaranteed by a number of the inhabitants.

The following figures, taken from the last official annual

A Road through the Forest.

return, relate to some of the numerous products of the district. The return showed a yield of 3,740 muids of wheat, 58,789 muids of maize, 9,000 muids of potatoes, and 662,320 bundles of oat-hay; and indicated that there were in the district (*inter alia*) 188,419 Merino sheep, 73,579 Boer goats, 1,120 stallions, 4,400 mares, 4,260 geldings, 1,140 bulls, 18,974 cows and heifers, 12,053 oxen, and 7,740 pigs.

Post-carts run to Breakfast Vlei, 39 miles; Grahamstown, 74 miles; Alice, 40 miles; Fort Beaufort, 54 miles. The following post-carts also run from Kei Road railway station, 18 miles, viz.: to Draaibosch, 18 miles; Komgha, 25 miles; Kei bridge, 35 miles; Toleni, 47 miles; Butterworth village, 50 miles; Idutywa village, 86 miles; M'Tentu mission station, 117 miles; Umtata, 143 miles; Tsolo, 168 miles; Qumbu, 180 miles; Mount Frere, 210 miles; Rode, 224 miles; Mount Ayliff, 240 miles; Kokstad, 269 miles.

Post-carts also run from King William's Town to Komgha, 42 miles; Stutterheim, 25 miles; East London, 36 miles, and Peddie, 33 miles.

KNYSNA.

Knysna is a coastal town fifty-two miles from George; population about 1,000. The area of the division is 810 square miles, and there are seventy farms. A good trade is done in the timber hewn from the neighbouring forests. The harbour affords excellent facilities for shipment, and there is steamer communication between Knysna and other coastal ports. The principal business of the place is in timber, and its manufacture, on the spot, for the making of various parts of Colonial waggons, carts, and railway sleepers gives employment to a large number of hands. There are five steam saw-mills at work in the district. The Government creosoting works receive the sleepers from the wood-cutters and prepare them for use on Colonial railways.

The forests are worked practically to their full extent. As to new openings, fisheries and the breeding of oysters are probably capable of putting fortunes into somebody's pocket. Dairy-farming is also like a practically unworked gold mine, for, in view of the fact that the rainfall of the district is considerable, and about half the farming land of the district is suitable for

good pasturage, the district seems an ideal one. Although it is not possible that the town and district itself can consume more than a small portion of the products of a dairying system, a regular service of steamers to and from Knysna, with refrigerating conveniences aboard, would render the prospects of the industry more attractive than if the means of forwarding were by rail from such a remote locality.

The other half of the farming area, or thereabouts, is suitable for agriculture, and the soil, which in many places is of a sandy, clayey consistency, is estimated on the average to be worth from 7*s*. 6*d*. to 30*s*. per acre.

The best crops are mealies, potatoes, and tobacco. Some of the farmers put tobacco first on the list.

The Knysna river, adjoining the township, is navigable for about eight miles up stream. It is very useful to the neighbourhood for recreation purposes; the local Rowing Club and others making full use of the water, in which there is also some good fishing. Of course, Knysna is a favourite resort for holiday-makers, visitors coming from distant parts of the Colony, as well as from the immediate locality. The town and its surroundings are so picturesque, and the hotel and other accommodation so good, combined with the attractions which have been mentioned, that it is a capital place for the spending of a quiet, healthy time. Anglican, Dutch, Roman Catholic, and Wesleyan denominations have their respective churches, and there is a first-class public library.

According to the latest official annual returns, there were produced, among other crops, 3,291 muids of wheat, 4,700 of barley, 4,100 of maize, 3,700 of potatoes, and 392,000 bundles of oat-hay; and there were in the district 8,890 Merino sheep and 73,579 Boer goats, and, among large stock, 4,100 cows and heifers, 3,800 oxen, and 2,280 pigs.

Post-carts run to Balmoral, 12 miles; George, 52 miles; and Plettenberg Bay, 20 miles.

The average annual rainfall is 34·32 inches, and September is the wettest month in the year.

KOMGHA.

Komgha, as a pastoral district, stands second to none in the Colony, and has an area of 546 square miles, with a population

of 1,610 white and 6,720 coloured people. The average rainfall is 27·74 inches per annum, the most rain falling during the month of November. The village of Komgha, which is the seat of magistracy, is situated twenty-five miles east-north-east of Kei Road station, on the Eastern line of rail; and by road is forty-five miles distant from the port of East London. The route from Kei Road station to Komgha has already been surveyed in connection with the proposed line of rail to the Native Territories, but what is urgently required is a light line of rail from East London, running along the coast, to open up the vast possibilities which present themselves for the settler who proposes to devote himself to agriculture, fruit-growing, or dairy-farming.

The chief industry is sheep-breeding and fattening stock for the butcher, and, as has already been mentioned, the district is admirably adapted for these purposes. The pasturage is grass—sweet in the valleys, with a mixture of sweet and sour grass on the uplands. The farms have been enclosed with substantial wire fences and sub-divided into paddocks, which in most cases are rendered vermin proof by the use of wire netting. The breed of sheep has been greatly improved of late years, and wool from Komgha district commands the highest market prices. Cattle thrive well, in spite of the drawbacks occasioned by red-water and the tick plague, and oxen fattened on the natural pasture give one the idea of highly-fed stall cattle. Agriculture has not made rapid strides, and but small areas have been brought under cultivation; farmers as a rule deem it more remunerative to purchase the grain they require and devote their energies to tending their flocks and herds. The soil is, generally speaking, of a rich and loamy nature, and only requires careful tilling to yield splendid crops. Along the coast sheep only thrive at certain seasons of the year—Heartwater being a terrible scourge. Once, however, a remedy or antidote has been found for this evil, there are many farms which could be heavily stocked all the year round. Dairy-farming has been started in some parts, and has proved remunerative. The main drawback, however, is the lack of easy and rapid transport; the same remark applies to the fruit industry, which would prove an excellent investment to men of small capital and enterprise, when once the railway difficulty has been satisfactorily settled.

The Kei separates Komgha from the Native Territories, and at the mouth of this river emigrants were at one time settled, and a considerable fishing industry was carried on. Tobacco grows well, and at one time large quantities of excellent rhubarb were grown for the King William's Town and East London markets. There are great possibilities in the Komgha district for agriculturists and small dairy farmers, but at the present time nearly all the profits made would be swallowed up by the expense of transport. The last returns show that over 1,500 muids of maize, 1,200 muids of potatoes, and but 305 bags of wheat were grown in the district.

LADISMITH.

The town of Ladismith contains a population of 600, and is situated in the South Karroo, at an altitude of 1,860 feet. The average annual rainfall is 14·18 inches, and March is the wettest month. The district is essentially a vine-growing one, and wine and brandy making, the principal industries, are capable of great extension. A vineyard of 2,000 vines yields about a leaguer of brandy; and about 400 leaguers, or 50,800 gallons, are accounted for annually, but a much larger quantity could be produced if desired. The grapes grown are of the very finest quality, and yet comparatively little wine is made, although the experience of viticulturists in other places teaches that the making and marketing of good wine is much more profitable than brandy-making. There should be openings here for enterprising winemakers and merchants.

The area of the district is 1,256 square miles, and there are 194 farms.

Cattle and horse breeding on a small scale has been successful, but the district does not seem to be suitable for stock-farming on a large scale. Angora goats and Merino sheep do not thrive, so that Boer goats and Cape sheep have it all their own way.

Ostrich-farming pays better than all, and since the farmers began the cultivation of lucerne, which is the big bird's favourite green food, the industry has been even more payable than hitherto.

Ladismith ostriches give such first-class feathers that the breeding birds of the division are in great demand in other districts. It is but natural that the comparatively precarious

occupation of agriculture, which has always been more or less held in check by irregular markets, should have taken a secondary position as an industry in the district since feathers and lucerne offered greater rewards; but wealth will be found in the old culture still when it is properly resumed.

The soil along the rivers which rise in the Zwartberg range is exceedingly fertile and deep, and in these places cultivation is carried on successfully.

The hope of the agriculturists is built upon irrigation, for this district does not differ from any other in regard to the necessity for water conservation. There are many excellent sites for the construction of reservoirs, upon the making of which large tracts of country could be placed under cultivation.

The prices frequently realised for the riverside arable lands are a criterion of their quality. From £75 to £100 per acre has been given for those with the best soil and irrigation advantages, while other farms with less fertile soil are, in the opinion of the owners, worth from £37 to £50 per acre. Grazing ground sells on an average at about 10*s*. per acre; where water is scarce unirrigated arable land is worth from £1 to £7 per acre. All the work in the district is done by coloured labour or poor whites.

Although Ladismith has been supposed to be one of the poorest, and really is one of the most isolated districts in Cape Colony (the nearest railway line is sixty miles away over a mountainous road), it has been shown that ostriches and lucerne have become a source of wealth to those who know how to manage them, and it is probable that there are many tracts of land in the district that will be brought into use for the enterprise.

Among the other crops in the division it is shown by the last official annual return that there is a yield of 4,900 muids of wheat, 3,500 of barley, 2,600 of potatoes, and 283,400 bundles of oat-hay; and that there are in the district 7,100 Cape sheep and 70,470 Boer goats, and, among the larger stock, 2,260 cows and heifers, and 7,050 ostriches, together with smaller numbers of other kinds of stock. There was also produced 364 leaguers of brandy.

Post-carts run from Ladismith to Laingsburg railway station, 60 miles, 10 hours; Amalienstein mission station, 12 miles; Calitzdorp, 30 miles; Riversdale, 53 miles.

MALMESBURY.

Malmesbury is the chief grain-producing district in the Western Province. The area of the division is 2,329 square miles. There are 636 farms. As the country opens up with the new railways there is every probability that progress will be the order all round, and, if the predictions of those who know best may be relied upon, Saldanha Bay and its vicinity will provide many openings for new store-keepers, builders, architects, and fisher folk, as well as other people. Vine-growing is carried on to a limited extent, but the ground has virtually only been touched for this product, principally in the Darling district, twenty-five miles from Malmesbury township. Horses and horned cattle do remarkably well, and the dairying industry has recently received an impetus through the opening of railway communications and the interest centred in Saldanha Bay development. These points will probably influence settlers to keep their eyes open in this direction, for there must be, as the place progresses, openings of all kinds for new enterprise and workers.

The town of Malmesbury has a population of 2,500. There are good hotels and boarding-houses. The Dutch, Anglican, and Roman Catholic communions have their churches, and there is a fine town-hall and a library. Sufferers from rheumatism and paralysis find benefit from the use of the well-known mineral springs, which are conveniently arranged for visitors. Saldanha Bay is but a few miles distant.

The average annual rainfall is 15·78 inches, and June is the wettest month.

Post-carts run from Malmesbury to Darling, 53 miles; Hopefield, 45 miles; Moorreesburg, 25 miles.

The following yearly yield, shown by the last official annual return, gives some idea of the fertility of the division. Among other products this annual report showed 168,723 muids of wheat, 58,757 barley, 313,427 oats, 28,351 rye, 2,140 potatoes, and 6,912,215 bundles of oat-hay; and there were in the district 226,833 Merino sheep and 42,364 Boer goats, 609 stallions, 3,800 mares, 3,550 geldings, 8,150 mules, 2,220 bulls, 15,845 cows and heifers, 6,130 oxen, and 24,900 pigs. This annual return also shows a yield of 4,271 leaguers of wine and 342 leaguers of brandy.

MIDDELBURG.

Middelburg, a flourishing town on the railway, in a very healthy district, 4,095 feet above the sea, contains a population of 2,600, and is 249 miles from Port Elizabeth by rail. It contains English, Dutch, and Wesleyan churches, a well-stocked public library containing about 12,000 books, three hotels, and a sanatorium. The average annual rainfall is 14·98 inches, and February is the wettest month. Grain is grown in the district, and stock and ostrich farming are carried on very successfully.

The area of the division is 2,222 square miles, and there are 299 farms.

The whole of the cultivated land is irrigated, and capabilities of production are such that the construction of irrigation works would bring under cultivation an enormous area that now lies idle. The soil is the usual friable, fertile dark loam of the low river lands, and stiff red pot-clay kind on the Karroo. The best paying crop, a great deal of which is grown, is lucerne, and potatoes come next. The land, as compared with other districts, is not expensive, and there appears a likelihood that a new comer would easily acquire an area on reasonable terms; if so he would probably be successful by cultivating on up-to-date lines. The dairy industry has been started, and with the cultivation of lucerne the district presents many advantages to the cattle-breeder.

The last annual official return records the following yields of produce, among other smaller quantities, viz.: 17,927 muids of wheat, 3,820 of barley, 10,860 of potatoes, and 474,640 bundles of oat-hay; and that there were in the district 14,954 Merino and 12,180 Cape sheep, 55,597 Angora and 7,940 Boer goats, and, among the other stock, 450 stallions, 3,900 mares, 2,390 geldings, 9,620 cows and heifers, 5,520 oxen, and 7,400 ostriches.

There is a post-cart to Rosmead Junction, seven miles.

MOSSEL BAY.

Mossel Bay, a well-built important town on the coast, 239 miles from Cape Town, has a population of over 2,000 inhabitants. The town is situated very picturesquely on gradually rising ground, overlooking the bay which bears its name. Steamers of the Union Castle and other lines call regularly at the

port, and a large forwarding business is conducted by the Mossel Bay merchants. It is a favourite resort of summer visitors, who find good bathing, boating, and fishing. There are three hotels, and the town possesses a public library and park. The English and Roman Catholic denominations have their churches, and a few other denominations their meeting-houses. The town is well supplied with water, regulated by works, the construction of which cost £26,000.

The average annual rainfall is 16·59 inches, and April is the wettest month. The area of the district is 707 square miles, and there are 133 farms. Many of these farms are in a flourishing condition, and, besides ordinary produce, a good deal of fruit is grown. On one farm, "Brandwaacht," 1,200 acres are cultivated without, and 600 with, irrigation. In the field-cornetcy of Brak River about 6,000 acres are cultivated, and another 2,000 are cultivated by means of irrigation. Another field-cornetcy irrigates 800 acres, and about 2,000 are under ordinary cultivation. One of the principal farmers has a large stretch of lucerne land, which he wets once in two months. Tobacco, oranges, and potatoes are the best paying products, while a good profit is made out of barley and oat-hay.

There are several conditions of soil, varying from sandy to deep friable loam and hard red. In some parts of the division it is found that the rainfall is sufficient for cultural purposes.

There is reason to believe that this division is well worth the attention of settlers. There is a ready access to a good port, and the ordinary necessaries of life are not expensive, while the land values, especially in comparison with those of other places not so favourably situated, appear to be reasonable.

The last official annual return shows (*inter alia*) 4,540 muids of barley, 540,440 bundles of oat-hay, 85,635 Merino sheep, 26,861 Boer goats, 3,820 cows and heifers, 2,760 oxen, and 4,642 ostriches.

Post-carts run to Oudtshoorn, 55 miles; George, 33 miles; Riversdale, 56 miles.

NAMAQUALAND.

In the town and vicinity of Ookiep is a population of 2,000, subsisting mainly on the copper-mining industry of the

neighbourhood, which has been carried on by English companies for nearly fifty years. A large annual production is still maintained. The ores, comprising silicates, carbonates, oxides, and sulphurets, occur in distinctive lodes of intrusive felspathic rock, chiefly in the gneiss and schists. The Ookiep, belonging to the Cape Copper Mining Company, is the principal mine. Other copper deposits have been found in several parts of Namaqualand, and it is believed that the copper industries are capable of extension by capitalists.

The town has a good club-house and swimming baths.

The area of this district is 17,536 square miles. The country itself is almost devoid of vegetation, and the temperature is extremely hot in summer time.

The approach to the district is *viâ* Port Nolloth, a small seaport, connected with Ookiep by a light railway line. The Woerman line of steamers and two small regular vessels convey passengers and freight between Port Nolloth and coast towns.

Annual returns show a yield (*inter alia*) of 23,487 muids of wheat, 3,120 barley, 7,220 oats, 3,630 rye, and 379,835 bundles of oat-hay; and that there are in the division 2,290 Merino and 131,240 Cape sheep, 93,679 Boer goats, and, among large stock, 5,270 cows and heifers and 2,790 oxen.

The average annual rainfall is 6·37 inches, and May is the wettest month.

Post-carts go from Ookiep to Bowesdorp, 44 miles; Garies, 74 miles; Van Rhyn's Dorp, 174 miles; Clanwilliam, 222 miles; Porterville, 292 miles; Piquetberg Road station, 317 miles; Concordia, 88 miles.

OUDTSHOORN.

The town of Oudtshoorn, on the Grobelaars river, contains a population of about 4,500, and is the centre of the most thriving division in Cape Colony. The average annual rainfall is 8·89 inches, and March is the wettest month. The district, which is comparatively a small one, thirty miles by sixty in area, is computed to contain altogether about 30,000 people, following agricultural, horticultural, and kindred pursuits. In the town there are three churches, that belonging to the Dutch Reformed community being a very fine building, erected at a cost of

£23,000. There is a Jewish synagogue, a large drill-hall, a good public library containing over 3,000 volumes, and two hotels. The local newspapers, the *Oudtshoorn Courant* and the *Zuid Western*, are high-class journals worthy of the district they represent, and have a wide circulation. The buildings are of a substantial character, the streets are well laid out and planted with trees. The climate is very healthy, and the town is often recommended by the medical faculty as a summer residence for sufferers from chest diseases.

The speciality of the valley is ostrich-farming. There are literally tens of thousands of ostriches in lucerne fields on the banks of the river. Alternate feeds of lucerne and veld bushes are considered beneficial to the birds. In addition to the lucerne fields, the valley produces summer crops of tobacco and potatoes; while orange groves, vineyards, and fruit gardens meet the eye everywhere. The Oliphants river traverses the whole length of the valley, and has a mean width of some 600 feet, and a mean depth of fifteen feet. The fall of the river may be taken as seven feet per mile.

The valley lands are particularly rich, and high prices have been realised at recent sales. About 24,000 acres are irrigated. Wheat-growing is checked by liability to rust. Great quantities of fruit and vegetables are gathered, and with extensive irrigation throughout the district fruit-growing will probably become general.

The present drawback to rapid and general progress is the lack of railway communication. A line of railway, however, is being pushed forward connecting the district with Mossel Bay and the most populous part of the Eastern Province. It is not difficult to foresee an immense increase of trade when the line is completed.

The soil generally is of a fertile character and mostly alluvial, much of it having been deposited by the overflow of the Oliphants river and other streams. With the exception of tobacco, the crops do not require manure, especially as very little cultivation is accomplished without irrigation. The general testimony of the farmers is that lucerne and tobacco are the best paying products. "Every cobbler to his last" is an old saying, *à propos* of which one farmer says his best crop is brandy, another champions oranges and potatoes, and yet another, who irrigates 10,000 acres, says one crop pays as well as another with him. The Field Cornet at Kruis River states that 7,022 acres are

irrigated in his ward. He places the value of this land at £75 per acre.

There are two cigar and tobacco factories in the township, giving employment to a large number of hands; and three aerated water factories, that supply the local needs for soft drinks, as well as exporting a little to neighbouring townships. There is an opening for men of capital and experience in the jam-making and fruit-preserving business; fruit, as observed, being very plentiful and easily grown. Nurserymen will also probably find openings here; so should market gardeners who will go in for producing vegetables and every other kind of kitchen stuff that will find adjacent markets with the opening of the railway.

There is probably very little scope (if any) for new comers in the ostrich-farming industry unless possessed of a considerable amount of capital. Land used for ostrich-farming realises £25 an acre and upwards. There is probably a good opening for small capitalists in tobacco-growing, brandy-making, and fruit-drying undertakings, which at present yield excellent returns, even on the somewhat primitive lines that are pursued in some instances.

A well-informed local resident assesses the approximate average value of cultivable or irrigable land at £25 per acre. There is but little virgin or unimproved land capable of being irrigated. The ordinary veld land is generally dry and scrubby, and is locally valued at from 10*s*. to £1 per acre.

There is a good demand for carpenters, blacksmiths, masons, stonecutters, and builders, the average wages being from 10*s*. to 12*s*. per day, with the chances of a good deal of overtime occasionally. As living for such artisans is as cheap in Oudtshoorn as anywhere in the Colony, there seems to be a fair opening for some of them there.

There is probably no agricultural land available by purchase except at very high prices.

Lucerne, the mainstay of the district, being a drought-resisting plant, grows throughout the summer on low-lying ground whether irrigated or not.

We confirm the remarks made by a writer recently, to the effect that some means should be adopted of exposing and combating the usurious practices of feather pedlars, frequently

German, Polish, or Russian Jews of a low type, who swarm about the country as feather buyers. Their method of working is to bewilder the ignorant and imperfectly educated farmers by offering them ready cash, of which they often stand much in need. They buy the feathers on the ostriches months before they are ready to pull, and advance a part or the whole of the price, for which they accept a bill bearing interest at 5 per cent.; not 5 per cent. per annum, as the ignorant people believe, but 5 per cent. (or 1*s.* per £1) per month (60 per cent. per annum!). They not only secure this exorbitant interest, but have security for the money advanced in the feathers they purchase. Another trick they play on isolated people living in a country place is to send relays of buyers, and offer one after the other sums much below the market value of the feathers—probably immediately after a sudden rise in the market has taken place. After three or four buyers have offered probably 30 per cent. less than the real value one man is instructed to offer 5 per cent. more than the highest of the previous offers, and he thus secures the purchase at 25 per cent. below its market value, and the rogues divide the plunder among them.

The latest official annual return for the district shows (*inter alia*) 13,129 muids of wheat, 2,630 barley, 2,090 maize, 3,330 potatoes, and 1,510,857 bundles of oat-hay produced; and that there are 3,880 Merino and 4,599 Cape sheep, 41,820 Boer goats, 660 stallions, 1,000 mares, 2,040 geldings, 2,050 mules, 1,250 asses, 920 bulls, 6,000 cows and heifers, 4,120 oxen, 46,290 ostriches, and 4,460 pigs. The return also showed a yield of 313 leaguers of brandy.

Post-carts run to Prince Albert, 44 miles; Prince Albert Road station, 77 miles; Langewacht, 19 miles; Jan Fourie's Kraal, 26 miles; Calitzdorp, 34 miles; George, 41 miles; Mossel Bay, 55 miles; Hazenjacht, 13 miles; Meirings Poort, 24 miles; Klaarstrom, 36 miles.

The celebrated Cango Caves are in this district, and should be visited by the traveller.

PAARL.

The area of this district is 610 square miles, and there are 150 farms. The average annual rainfall is 30·60 inches, and June is the wettest month.

The town of Paarl itself is so situated along the Berg river that a resident at one end of the settlement can enjoy a level drive of seven miles to the other end, or fourteen miles there and back, without being out of Paarl. There are large and small vineyards and orchards scattered widely around.

The centre of the town is about fifteen minutes' drive by post-cart from the railway station. There are several good hotels and boarding-houses. The principal religious denominations are the Anglican, Dutch, and Lutheran. There is a large public room for entertainments in the Town-Hall, a library containing over four thousand volumes, and good schools.

There is little doubt that there will eventually be many openings for new settlers in this flourishing district. Its importance is evidenced by the fact that it is one of the first places to attract the attention of persons touring the Colony. In every direction there meet the eye well-kept stretches of cultivated lands, producing wealth for the proprietors, and more or less rich in promise for the near future. In most of the local methods of production the ways of the fathers are still the ways of the sons, and consequently there is an appearance of contentment and repose about the place that is out of keeping with the progressive nature of the times and the potentialities of the whole district for future industrial greatness. In the Paarl and many other similar communities in Cape Colony there is, however, a robustness that is lacking in old-world countries, and, owing to the training widely given to the young scions of the old rural Dutch families, hope runs high that every bit of cultivable land will be ere long fully utilised. One of the principal industries is stone-quarrying, from which large supplies of blue stone are obtained. Granite of excellent quality is also found in abundance in the district, and has been used in the building of the Parliament Houses in Cape Town, and the construction of the Docks in Table Bay. Most of the country is too hilly for irrigation. About 23,000 acres are under cultivation for different purposes. Among agricultural crops oat-hay pays the best, but of course viticulture is the staple industry of the district. Included in the division is the fertile valley of French Hoek, where there is already a large fruit-farming ranch belonging to the late Right Hon. C. J. Rhodes, brought up to a high

standard of productiveness under the recent management of Mr. Pickstone.

In this division there are undoubtedly openings for stock-breeders and nurserymen, blacksmiths, builders, painters, masons, carpenters, and bricklayers, and it is desirable that intending settlers should pay preliminary visits to the principal places in the division so as to ascertain what is in store for them; as the distance from Cape Town is only a few miles the trip can be done quickly and inexpensively.

At Wellington, as at Paarl and Stellenbosch and other places of the kind, the enterprising fruit-grower who would combine drying and canning or bottling for export will undoubtedly find not only plenty of fruit ready for his factory, but a thoroughly good climate for his trees. The viticultural industry is assuming great proportions in this district, and the growers are wisely growing the vines that produce the heavy wine for which the soil is most suited. There are openings for fruit preservers and growers; and as they increase it is probable that factories for treating and preserving fruit will increase accordingly.

Mr. H. E. V. Pickstone was recently interviewed upon the subject of prospects for new comers, and he said that, in his opinion, there were opportunities in the district of Paarl for persons with capital of, say, from £1,500 to £2,000, for the purpose of developing the fruit and wine industries. There are openings also for almost every branch of trade connected with agriculture. For instance, his firm order agricultural implements from California, but wishing to foster local industry they endeavoured to purchase in Paarl. A certain kind of orchard truck had been obtained from California, and a dozen more were needed. Messrs. Pickstone tried all the waggon-makers in Paarl, with the intention of placing this order with them, if they could get at anything within 50 per cent. of the Californian price; but they could not get within 100 per cent., so there was no other course left than bringing them from California—landed in Paarl at a cost of about £22 each. The Paarl waggon-builders wanted £35, and, inasmuch as the carts are sold in California at about £16 a-piece, the Paarl price was more than double.

During the last six or seven years the farmers have had their hands full of the reconstruction of their vineyards on American

stocks, till to-day some of the most enterprising men have larger vineyards on the new stocks than they ever had before. Some of them are now paying attention to the planting of orchards. They have a little spare cash, and, being satisfied that fruit-growing pays, are pushing ahead with it in earnest. A farmer recently bought from Messrs. Pickstone 1,000 trees, 800 of which were apples on blight-proof stock. He chose varieties which had been thoroughly tested. An order like this is not at all exceptional.

In Wellington, Paarl district, the apricot orchards have become quite extensive, and in Mr. Pickstone's opinion Wellington stands absolutely ahead of any other part of Africa for this fruit, a view that will probably be endorsed by everybody. The French prunes, which he thought and hoped would prove so valuable in the Western Province as a special line in the fruit business, have proved unsatisfactory, owing, it is thought, to unsuitableness of soil, although the reason is not very definite at present. He still feels there will be an extensive prune industry in the Western Province, though not on the soils which it was thought they could flourish in. In this connection it is pleasant to note that a well-known fruit-grower in the district of Paarl recently called on Mr. Pickstone, and informed him that the result of his last season's prune crop was very much better than he had hoped, as the soil in certain parts of his farm was suitable for them. If this proved to be correct by the results of one fruit season, he intended planting a further 2,000 prune trees on this particular portion of his farm, which is dry, light soil. He dried about three tons of his prunes this season, and turned out a product in every sense up to the best Californian article. He disposed of these at satisfactory figures, although he had had pessimistic views upon his chances, and did not expect to sell so easily and well at the beginning of the season owing to the wholesale merchants' old-standing preference to deal in the Californian and French imported prunes. But, the quality of this Paarl output being so superior to the condition in which the foreign fruit often arrives, the dealers changed their minds and bought it up because of its freshness. And this is the main point. The African product, if it can be grown and treated on a large scale, is a better article for merchants to deal in than that from California or Europe, because it can be

guaranteed to be fresh, while the other may be four or five years old. The prospects for growing and drying prunes in the Western Province are considered excellent, but the exact soil conditions must be found out, and Mr. Pickstone's opinion is that, although the right track may have been found, it cannot yet be stated with certainty which are the best locations for prunes.

In the Wellington district apricots grow best and pay best. Speaking generally of the district, apples, pears, peaches, and Japanese plums, if the varieties are properly selected, can be depended upon to pay well. The new comer should always enquire of his neighbours upon such points, and the Messrs. Pickstone will at all times be pleased to give their gratuitous advice to the prospective fruit-grower upon any matters that will help to ensure success. Visitors to Cape Colony are recommended to inspect Messrs. Pickstone and Bros.' fine fruit orchards and nurseries at Groot Drakenstein, near Paarl, where every variety of fruit that will grow in African soil, under the conditions of the Western Province, will be met with. They issue a catalogue and fruit-growers' guide post free on application. It contains valuable general information.

Wellington township contains a population of 1,500 white and 1,800 coloured people. It is about one hour's cart drive from Paarl, and is a well-laid-out town planted with trees and well supplied with water from the mountains. It is a busy place, with wine and brandy making, and fruit-drying and jam-making factories going on.

There is a post-cart to French Hoek, fifteen miles.

The last return showed an annual yield of 24,495 muids of wheat, 5,609 barley, 24,114 oats, 2,081 potatoes, 3,267,505 bundles of oat-hay; and there were in the district at the time of the return 46,711 Merino and 2,855 Cape sheep, 13,105 Boer goats, 2,390 mules, 4,700 cows and heifers, and about 12,000 pigs. This annual return also shows a yield of 9,283 leaguers of wine and 710 leaguers of brandy.

PEDDIE.

Peddie, the centre of a district bearing the same name, is situated thirty-three miles south-south-west of King William's Town and thirty-five miles east of Grahamstown. The population

of the town, including the adjoining mission station, Newtondale, amounts to 280 whites and 410 blacks. The area of the district is 657 square miles, with a total population of 1,750 white and 18,080 coloured people. The average rainfall is 24·30 inches per annum, the wettest month being November. The chief products are wool, ostrich feathers, mealies, kaffir corn, oats, beans, tobacco, and wheat, although of late years the latter crop has proved very uncertain on account of the protracted droughts and the ravages of rust. A large portion of the district is peopled by natives, who, besides keeping numerous small flocks of sheep and goats, cultivate the ground in a very primitive style. At the date of the arrival of the " settlers " who came to the Colony in 1820 Peddie formed a portion of Kaffirland, but at a later date it was annexed to the Colony, and many of the settlers who were located in the district of Bathurst moved into Peddie, where their descendants are now to be found as prosperous and well-to-do farmers. Most of the ground worked by Europeans is cut into holdings averaging 1,200 acres in extent. There are large tracts under cultivation, and the soil is productive, although in some parts fertilisers are required. Along the coast wheat is chiefly grown, and many strippers are seen at work during the harvest time. There is little or no irrigation, as the streams run deep, and without artificial aid the water could not be brought to the land. On account of the undulating nature of the country any scheme of irrigation on a large scale would fail, but at the same time much more might be done by the farmers in conserving the rain supply. In some parts the absence of dams proves most inconvenient to the stock farmer, whose flocks are forced to travel during droughts for considerable distances simply to obtain drink water.

There are great possibilities for fruit-growers ; along the coast lands bananas and pines grow well, and further inland there are splendid sites for orchards. What is really required to open up the resources of the district is a light line of rail connecting the town and outlying parts with King William's Town or Grahamstown. Sunflower has been grown here with great success, and forms an important adjunct to the feed usually provided for farm stock ; there is no better fattening food for ostriches and poultry than the seed of the sunflower ; every portion of this useful crop can be utilised for some purpose on the farm.

There are some 19,000 woolled sheep and 30,000 common goats in the district, the latter being kept mainly by the natives for the sake of their milking properties.

The value of land is from 10*s*. to 15*s*. per acre. As a rule the district is well adapted for horned cattle, although of late years the tick plague has proved very troublesome, as these little pests frequently ruin the teats of milch cows. There are, however, proper remedies even for ticks, and with constant care and attention the cattle can be kept fairly clean and healthy.

There are several hamlets scattered about the district, such as Bell, Bodiam, Hamburg, and Wooldridge.

As ground can be purchased at fairly reasonable prices, there are good openings for men with small capitals who are prepared to put up with small profits until the district is connected by rail with other centres.

The rate of transport to either King William's Town or Grahamstown varies from 1*s*. to 1*s*. 3*d*. per 100 lbs.

PHILIPSTOWN.

Philipstown, a township containing a population of 781, is distant 538 miles from Cape Town, on the main line of railway. The area of the division is 2,540 square miles, and there are 208 farms. It possesses a bracing, healthy climate. It is entirely dependent upon irrigation for produce, and in reference to this subject one of the farmers points out that there are many suitable spots for irrigation works on a small scale, and that if labour is supplied the cultivators are willing to undertake the construction of these works themselves. The suggestion was made to the writer, and finds general favour in the district, that an improved Masters and Servants Act should be made and locations abolished, as they are only a rendezvous for loafers. These locations are under control only in name, and lazy natives flock to them to lead a loafing life instead of responding to the demand for their labour. The land throughout the district is alternately stiff and friable, and wheat, oat-hay, and lucerne are the best paying crops.

The average annual rainfall is 15·84 inches, and February is the wettest month.

The last partial annual return shows a yield (*inter alia*) of 65,541 bundles of oat-hay; and the existence of 195,420 Merino

and 11,720 Cape sheep, 36,856 Angora and 80,425 Boer goats, and live stock of other kinds.

A post-cart goes to Hout Kraal station, twenty-five miles.

PIQUETBERG.

This division ranks very close to Malmesbury in importance as a grain-producing centre. On the coast the main fisheries of the Cape are located, and are capable of great extension. Wine-making and all the present industries of the place might be much extended, both by the present residents and new comers. The breeding of horses would be a particularly suitable industry, and would pay well in the hands of those who understood it. There are also openings for new comers in poultry-farming and dairying lines; and market gardening, combined with the pruning of fruit trees for local growers. There are great deposits of lime and many old salt-pans in the district, and profitable businesses might be done in lime-burning and opening up the salt-pans. With reference to the fishing industry, a visit to St. Helena Bay and the adjacent coast would probably convince interested visitors that there is ample scope for the profitable development of this industry.

It is estimated that about 150,000 acres of land are suitable for agricultural purposes. A considerable amount of irrigation is carried on, and, as in other districts, can be enormously increased if proper works are started. The land generally is very sandy, with considerable areas of a gravelly nature. The soil is very rich at the foot of the Piquetberg and Porterville mountains. The average value of the veld land is about 15*s.* per acre.

There are openings in the district for general store-keepers and produce merchants. It is recommended that a visit be paid to the place beforehand, and that the visitor call upon the Civil Commissioner, who will give him the safest information. A few good farm hands, gardeners, and men of the artisan class will probably find ready employment.

44,837 muids of wheat, 12,582 of barley, 78,678 of oats, 13,620 of rye, and 134,938 bundles of oat-hay are annually produced in this division; which also contains 66,114 Merino and 11,775 Cape sheep, 53,861 Boer goats, 225 stallions, 874

mares, 1,230 geldings, 2,290 mules, 791 bulls, 4,760 cows and heifers, 2,114 oxen, and 8,500 pigs ; 375 leaguers of wine are also produced.

The town is an important posting centre. It has a population of about 600, and is situated on a hillside about 500 feet above the level country. The average rainfall is nearly sixteen inches, and June is the wettest month in the year.

Post-carts run from Piquetberg to Piquetberg Road station, 38 miles; to Clanwilliam, 67 miles; Van Rhyn's Dorp, 115 miles; Garies, 215 miles; Bowes Dorp, 245 miles; Springbokfontein, 285 miles; Ookiep, 289 miles.

PORT ELIZABETH.

This town has been aptly called the Liverpool of the Cape. It is the largest seaport on the East of the Colony, and its trade returns are larger than any other town in the Cape. Its central position enables it to command the principal landing and forwarding business with the new Colonies. A good harbour has been made the best use of, and improved by works that have cost a great amount of money. Goods are expeditiously landed at iron piers, which are provided with powerful cranes, and the Port authorities have an excellent system of unloading cargoes by working them out of the vessels from both sides at once. The town is essentially a mercantile one, and contains warehouses of great capacity, belonging to influential Colonial and European firms. These, and the banking and other financial institutions, have well-appointed suites of offices. Most of the businesses of the town, besides those of the wholesale merchants, are conducted on a considerable scale, and the business men of the district are among the most progressive, energetic, and wealthy in South Africa. The principal Agricultural Show in the Colony is held here annually, and is always a great success. Its maintenance in past times of industrial torpor was due to the unflagging zeal and patriotism of Mr. H. B. Christian, and to his labours is largely due the influence such a show bears upon the community to-day. There is a very fine town-hall, and well-stocked public library, hospital, custom-house, public offices, and theatre. The residential part of the town is situated at the top of the hill that surmounts the business

Photo by Wilson,] THE MORNING MARKET, PORT ELIZABETH. *[Aberdeen, N.B.*

area, and there are many beautiful houses and gardens in the neighbourhood.

The *Eastern Province Herald*, the *Port Elizabeth Telegraph*, and the *Advertiser* are the principal newspapers in the district, and have a very wide circulation.

The average annual rainfall is 23·96 inches, and November is the wettest month.

The area of the division is 176 square miles, and there are twenty farms.

There are post-carts to Humansdorp, fifty miles.

PRINCE ALBERT.

This division consists entirely of Karroo veld. Generally speaking, it is fit for the breeding of small stock of all kinds, including ostriches. The village itself is a well-watered place, with a population of 1,500. The average annual rainfall is 10·66 inches, and March is the wettest month.

The area of the division is 4,293 square miles, and there are 193 farms.

There is in the district a considerable amount of agricultural wealth, which is the creation of a small stream fed by a perennial spring in the Zwartberg, ordinarily discharging from one to three cubic feet per second, and supplemented by occasional showers and one or two floods of a few hours' duration per annum. Continuous irrigation percolates the soil, and permits of a number of norias worked by mules, and pumps operated by wind-mills. The water is raised about thirty-five feet. Every available drop is turned to good account for irrigation purposes by the farmers, who seem to have had their faculties so sharpened by droughty seasons that they have developed an irrigation instinct that also leads them unerringly to the selection of the most suitable land for the purpose. Fruit, wheat crops, and tobacco are successfully raised.

In several of the favoured portions situated near the base of the Zwarteberg mountains the cultivation of tobacco has been a successful industry for several years: the kind grown seems to be of a superior character, assuming in the cured condition a light golden hue, and it is believed that in course of time,

when methods of finer cultivation are better understood, large quantities of high-class tobacco will come from this district.

From this village the direct road to Oudtshoorn is through the famous Zwarteberg Pass, and the traveller, on his passage through the mountains, has many an exciting time (especially in wet, slippery weather), as the mule path takes him perilously along the narrow mountain path to an altitude seven thousand feet above the starting-point. He is compensated for some of his tribulations by the magnificent view he gets from his elevation, comprehending rugged mountain grandeur that is met with in very few parts of Africa. The box seat on the cart is recommended on account of the view, and because it is easier to make a leap for safety from that position than from the inside, should a wheel slip over the precipice.

The community has had its throbs of Rand-like excitement, for colours of gold have been frequently found in the streams washed down from the neighbouring mountains, and there is probably an auriferous deposit situated somewhere in the ranges.

Some of the representative farmers in the district on being questioned pointed out that irrigation is applied to some extent wherever water is available throughout the whole of the division, and that large tracts of uncultivated land of a fertile character could be brought under profitable cultivation if reservoirs were built for the storage of irrigation water. A good deal of respect must be paid to opinions of the better-class farmers upon such questions as the suitability of sites for dams and the sinking of wells. In this district assistance will be forthcoming from the farmers in pointing out suitable sites. The soil is apparently very suitable for dams and wells in some places that were pointed out to the writer.

Approximately 6,500 acres are cultivated by irrigation, and this quantity can probably be increased fourfold.

Among other products it is shown by recent annual returns that 5,730 muids of wheat and 278,674 bundles of oat-hay are produced in the year; and that there are (*inter alia*) 133,745 Merino and 28,508 Cape sheep, 13,668 Angora and 86,187 Boer goats, and 2,650 ostriches in the district. The annual return also shows a yield of 199 leaguers of brandy.

Entrance to Zwaarte Berg Pass from the North.

Post-carts run to Prince Albert Road station, 29 miles; Oudtshoorn, 44 miles; George, 85 miles; Klaarstrom, 37 miles; Vonderling, 70 miles; Willowmore, 100 miles; Fraserburg Road railway station, 36 miles.

QUEENSTOWN.

Queenstown, the centre of a prosperous agricultural and pastoral district, is 3,544 feet above the sea, on the Cape Government Railway, with a population of 4,100, and distant 150 miles from East London. The area of the division is 11,749 square miles, and there are 331 farms. Average annual rainfall 20·05 inches. Wettest month January. In the township there are the usual public buildings. A town-hall, built at a cost of £15,000, contains a good library and reading-room, court-house, &c. There are commodious Anglican, Roman Catholic, Wesleyan, Baptist, and Presbyterian churches, and a good hospital. Outdoor recreation is encouraged by botanical gardens, swimming bath, golf links, recreation grounds, and a racecourse. The local water supply is very good and ample, the reservoir having a capacity of 80,000,000 gallons.

The majority of the farmers in the district are English or of English descent, and much of the work is conducted on European lines. An excellent breed of cattle is maintained, while wheat and wool are the principal products.

There are scarcely any industries operating in the Queenstown division that are not capable of extension both by the present residents and new comers. Agricultural and pastoral pursuits have by no means reached their limit of development. Agriculture itself is in many instances conducted in a primitive and imperfect fashion, and on every farm where the industry has been conducted for a course of years it is found that more and more land can be brought under cultivation every year. Men of small means and agricultural experience would do well to take over the cultivation of small erven on shares with landowners, a practice already prevalent. Nurserymen will find good openings.

In this district, as in so many other places in the Colony, the farmer's eye is fixed on the talismanic word "irrigation," and the spirit of "wacht en beetje" seems to have made itself known

to the general community as the bearer of a watchful message encouraging them to look for the advent of Government enterprise, or the flotation of millionaire irrigation companies that shall enable everybody to acquire a regular supply of water at so much per gallon, with which they may convert their little wildernesses into profitable fields and orchards. At the same time the fullest possible use is made of irrigation, although the absence of storage capacity and systematic conservation enables no criterion to be formed of the capabilities of the division in this direction under a comprehensive system. Many farmers irrigate barley and wheat for use as green feed for stock.

In the Queenstown district the dry season begins in the winter and continues right through to the early spring when the crops are growing, and unless irrigation can then be applied success is extremely doubtful. During the summer and early autumn storm water should be led out of the rivers and conserved till required in the winter and spring.

It is impossible to pass from this point without referring to the apparent urgent need that exists in the Colony of the offices and vigilance of a Conservator of Water. In most of the American and Australian States the Conservator of Water and his department are an important adjunct of the State machinery. In South Australia, where the conditions are so similar to those prevailing in many parts of Cape Colony, the Conservator of Water and his assistants periodically traverse the water-sheds of the State from the sea-board to the far interior, and wherever it is necessary to dam up a stream or divert its course, to construct a reservoir, or to sink a well, the want is met forthwith. It is perfectly feasible that a Water Conservation Department or an Irrigation Board of paid experts under the control of a professional engineer should become a part of Colonial machinery. A perusal of this compilation will demonstrate that the whole country side waits, and, in some places, waits disastrously, for an irrigation policy.

Dairy-farming and fruit-growing are in operation in the district, for home consumption and sale in the new colonies. These industries are capable of extension either by the present tradesmen or by new comers. About 1 per cent. of agricultural land is under cultivation, but large cultivable areas remain untilled through lack of water. It is estimated that about

9,000 acres are cultivated without irrigation, and about 2,500 acres are irrigated.

A few carpenters, masons, painters, and bricklayers will probably find employment in the district at from 10*s*. to 14*s*. per day; in some cases by special arrangement thoroughly good men may occasionally get more. Of course, living is cheaper all round than in the large centres, such as Johannesburg and in Cape Town.

Among other products recent annual returns show a yield of 20,688 muids of wheat, 16,407 of maize, 7,030 of potatoes, and 1,229,804 bundles of oat-hay; and, among other stock, there were 377,559 Merino sheep, 41,730 Angora and 9,260 Boer goats, 340 stallions, 2,555 mares, 2,120 geldings, 590 bulls, 14,730 cows and heifers, 9,800 oxen, and 2,550 pigs.

Post-carts run to Lady Frere, 28 miles; Cala, 61 miles; Whittlesea, 23 miles.

RICHMOND.

The area of the district is 2,860 square miles, with 140 farms.

Richmond, the town which gives the division its name, is situated 4,530 feet above the sea, in one of the coldest winter regions in South Africa. It has a population of 1,300, and is twenty-four miles from Richmond Road railway station by road. Sheep-farming has been the pursuit of the rural population for many years, but the industry would be much more profitable if the flocks were improved by the introduction of a superior breed of sheep.

Agricultural farming is rendered precarious by the irregularity of the rainfall, and many parts of the district seem like waste lands in consequence. They are, however, only waiting for the introduction of storage reservoirs and irrigation works to prove their fertility and productiveness. The average annual rainfall is 14·24 inches. March is the wettest month.

The staple products are wheat, oats, and potatoes.

The district is admirably suited for horse-breeding, and a great deal of success has attended the pursuit of this industry in the past. Now that the military have ceased to commandeer the best that the breeder can produce, as well as all others, this business will probably be considerably extended

for there will always be a larger demand for South African horses of the stamp that this district can produce than ever existed before.

All the arable land is rich and fertile, and, with rain or irrigation, gives abundant yields.

A few tradesmen and skilled artisans will probably find openings in the Richmond district very shortly. A few competent workmen can at present obtain employment in this district, where living is cheap; the regular wage for operatives, mechanics, blacksmiths, carpenters and builders being from 7*s.* 6*d.* to 10*s.* 6*d.* per day.

If the valuation of one farmer in this district of his holding of 20,000 acres of land were accepted as a criterion of general prices there would be no chance for new settlers. He says he considers an acre of cultivable land on his farm of 20,000 acres is worth £300 unirrigated. This is an instance, among many others, of the absurd values that some owners attach to their arable lands. Only rich deposits of gold or diamonds in the property could possibly make it worth £6,000,000 sterling.

Potatoes and lucerne are, in the opinion of most of the farmers, their best crops. One farmer whose holding is at an elevation of 5,700 feet annually plants about 200 bags of seed potatoes, and he considers a yield of ten bags from one bag of seed satisfactory; while another farmer says he frequently gets twenty bags of potatoes from one bag of really good seed.

Among other crops recent annual returns show a yield of 3,730 muids of wheat, 2,550 barley, 4,690 potatoes, and 119,415 bundles of oat-hay; and in the division there were 203,648 Merino and 19,683 Cape sheep, 34,524 Angora and 11,930 Boer goats, and, among the larger stock, 1,770 mares, 1,040 geldings, 1,900 cows and heifers, 1,420 oxen, and 1,930 ostriches.

A post-cart runs to Dassiefontein, thirty-two miles, five hours; and to Richmond Road railway station, twenty-four miles, three and a half hours.

RIVERSDALE.

Riversdale is a thriving market town in which the local produce is sold twice a year. The Vette river flows at a short distance away. In the ostrich-feather season the town is

frequented by feather buyers from all parts of the Colony. All nationalities are comprised in the throng, including a strong contingent of the Hebrew fraternity from Oudtshoorn and elsewhere.

Some day in the near future the dairying industry will be very much increased. Already large quantities of butter and kindred commodities are produced.

The staple products of the district are ostrich feathers and wool.

Agricultural settlers will probably find it worth while to pay a visit to this district. On their journey from Swellendam by cart, or from Mossel Bay by the same mode, they will derive a very good idea of the nature and capacity of the fertility of the land under careful, vigorous tillage. In all probability it will be possible to secure here and there some eligible land at reasonable rates on rental or sale.

The town will soon be connected with Swellendam and the main line of the Eastern Province by the railway which is now in course of construction, and, inasmuch as a wink is as good as a nod to a blind horse, it is unnecessary to say much about the desirability of settlers securing their farms as soon as possible.

There is at present a population of about 2,000 in the township.

Interviews with the farmers in the district elicited the fact that the growth of tobacco is becoming an important industry, and potatoes seem to be a favourite crop. As usual, every tiller of the soil is ready with a plan for conserving the waters of the rivers and kloofs for the purposes of irrigation, although in many parts of the district the existing rainfall is sufficient for the growth of many cereal and leguminous crops and tobacco. A little wine and brandy are produced.

A national characteristic of the average Dutch farmer is prominently *en evidence* in the Riversdale district—namely, his abhorrence of an admission that his worldly condition is a prosperous one. The prowling visitor in search of information so seldom expects to find the pursuers of a flourishing industry wearing worried looks that he seeks for a cause. He is told that martial law stopped things growing, and that in normal times freights and knavish tricks on the part of feather buyers cause

worry and depress the exchequer. Sometimes these laments are real, but taking the farming community of Riversdale and the Colony at large in ordinary times, the farmer does well, and often on his own admission could do better by the exercise of more labour and outlay on his immense holdings. It is so in Riversdale district and the adjoining country within a radius of 200 miles north, east and west of the township.

Along the mountain base and adjacent slopes the soil is of a stiff character, and on the flats alternately stiff and friable with a large percentage of phosphates. Along the sea coast it is mostly of a sandy nature.

Two of the most prominent farmers in the district stated that they used lucerne mostly for ostriches, not as a crop to be cut and dried; and, as pointed out in reference to the Oudtshoorn district, this culture, taken in connection with the ostrich industry, is the most paying crop on the farm.

The farmers referred to, as well as others in the district, admit that irrigation will tend greatly to make the future prosperity of this part of the country. It is pointed out that from a financial point of view no investment seems so profitable as irrigation, for there is nothing for which a farmer is prepared to pay a higher rate of interest than water. It is, so to say, the life of his calling. In Riversdale, as in many other parts of the Colony, we have an excellent climate, and fertile soil; the occupants of the land do but wait for the water. Riversdale authorities urge the necessity of conserving the water in the river beds at the sources of the rivers and along their courses seawards, as well as gathering it in dams. This would give large lakes at a high level, from which water could be brought to the eligible ground in the district that lies uncultivated. If, for instance, the waters of the rivers of the Caledon, Swellendam, Riversdale, and Mossel Bay districts were thus conserved, the yearly imports of grain into this Colony would be diminished by the impetus given to wheat growing by irrigation on the highly suitable land in the Cape.

About 8,000 ostriches thrive well at present in this district, and the number will probably ere long be much increased. The Riversdalers believe in the payableness of pigs, and, as will be seen, the last time a count was taken there were over 2,000 of these useful animals running about the division. Large quantities

of honey are sent out from the district, and with care and attention a very profitable industry could be opened up on the farms along the coast. At present the honey is obtained from the nests of wild bees, and varies in flavour according to locality and season of the year. The usual price at which honey is sold at Riversdale varies from 1*s.* 1*d.* to 1*s.* 2½*d.* per lb. for the comb.

There is a great opening for a fishery on a large scale. There are excellent fishing grounds abounding in fish, and good markets in the neighbouring districts alone; the demand for fish in Riversdale and Ladismith districts being much greater than the supply, and it will be even greater there and further afield with railway facilities.

In the near future, if not at present, there will be openings for nurserymen, stock-breeders, artisans, and well-borers, and it is probable that some of these, as well as superior farm workers, would find employment even now. Still, it would probably be wiser for a poor man who can't afford a run round such districts as these to "bide a wee."

The last return showed an annual yield of 3,700 muids of wheat, 10,400 barley, 5,360 maize, 1,180 potatoes, and 547,591 bundles of oat-hay; and that there were in the district 96,547 Merino and 2,600 Cape sheep, 1,796 Angora and 59,885 Boer goats, 580 stallions, 2,040 mares, 990 geldings, 1,380 bulls, 10,800 cows and heifers, 5,750 oxen, 7,800 ostriches, and 2,160 pigs.

The average annual rainfall is nineteen and a half inches, and March is the wettest month.

Post-carts leave Riversdale for Swellendam, 55 miles; Mossel Bay, 56 miles; George, 89 miles; Ladismith, 53 miles.

ROBERTSON.

The picturesque township of Robertson, 650 feet above the sea, with a population of 2,100, is the centre of a thriving agricultural, viticultural, and horticultural district, the area of which is 1,526 square miles, with 145 farms. The average annual rainfall is 11·76, May being the wettest month. Viticulture is the principal industry, and it is probable that the productive power of the Robertson vineyards is not surpassed by

any others in the world. The cultivated area, however, is insignificant in comparison with that which is available for the purpose.

There are two distilleries for brandy-making. The average yield from a thousand Robertson vines is three leaguers, or 379 gallons, and this has occasionally been exceeded. The latest return shows that from the limited area under vine cultivation 4,061 leaguers of wine and 2,950 leaguers of brandy were produced here.

Brandy and wine are the best paying crops in this district. The brandy output averages 3,000 leaguers, or 380,000 gallons, per annum, valued at £30 per leaguer.

There are probably upwards of 50,000 acres of good arable land in the district capable of being placed under irrigation. The soil is undoubtedly rich, consisting chiefly of clay marl, and worth probably from 10*s.* to £20 per acre, according to situation and water supply. Some portions are irrigated by water diverted from the Breede river.

There seems to be a good opening for ordinary live-stock breeders, and especially for horse-breeding; the country being suitable for the breeding of the best class of working horse.

There are very few white labourers in the district, and these are of the class known as "poor whites," who seem to prefer to remain under that designation rather than work in the hope of advancement. Coloured labourers are too independent to be a boon to the community, merely working to satisfy their weekly requirements. White labourers receive from 3*s.* to 4*s.* per day, carpenters, blacksmiths, stone-masons, and bricklayers from 7*s.* 6*d.* to 12*s.* 6*d.*, and tailors from 5*s.* to 10*s.* Inasmuch as living is cheap, especially for people who can dispense with luxuries, steady men who are not burdened with large families may accumulate a little cash for a rainy day out of such wages. It may be explained that the class of tailors referred to are principally those who are accustomed to the coarser work of the trade, and the construction of the serviceable go-to-meeting togs that the Africander farmer loves best, and seldom the elegant cuts that are the joy of the Piccadilly dandy.

Although reference has been made in the remarks on irrigation to the ability of the average farmer to successfully use the methods of higher cultivation as an irrigator, yet it does not

always follow that he makes the most of his advantages; and this qualification applies with some force to the agriculturists at Robertson, who might with great advantage expend more money than they do in conserving flood waters. A syndicate of local farmers have just constructed, with the aid of Government rendered under the Irrigation Loan Acts, a weir across the Breede river and a furrow some twenty-four miles long, which promises to be a successful work.

Of the total area of the Division of Robertson about 100,000 acres are under cultivation, and of these probably about two-thirds are irrigated, though only to a small extent.

A yield of 3,000 tons of potatoes and upwards of 2,000 tons of oat-hay, besides large quantities of cereals, is annually recorded for this district; the latest annual return being 37,124 muids (one bag per muid) of potatoes, 797,768 bundles of oat-hay, and over 13,000 muids of barley.

Particulars like the above indicate the solid nature of business affairs in the town and district, and yet a visitor walking through its extremely quiet streets and lanes would not imagine that such a Rip van Winkle little place held so many well-filled money-bags.

The advent of new settlers with a determination to make the most of the soil would probably have a healthy influence in creating and gradually bringing about the enlargement of the industries of the district to their full extent.

Although in close proximity to the railway station of the Cape Central Railway, Robertson is not much visited by the travelling public, and consequently the one hotel in the place that could be recommended has had during the martial law season a somewhat melancholy time, much to the disgust of the Hebrew proprietor. It is characteristic of many up-country towns that, having pursued, apart from natural growth and expansion, a come-day, go-day course of existence for many years, a conviction takes root that change is impossible.

Montagu, six miles from the Ashton station of the Cape Central Railways line, is surrounded by the neighbouring mountains, and is approached by a pass of a few miles in length. The place is best known for its production of Cape brandy, sold in Cape Town and other places as "Montagu." There might profitably be grown in this district trees suitable

for firewood, such as the blue gum, fuel being very scarce and expensive. A very small proportion of the land is suitable for agricultural purposes, the country being chiefly sour veld and ruggens. The best arable land, known as black soil, fetches £5 per acre. There are openings in the district for nurserymen and stock-breeders, and for reliable and capable men of the artisan class. There is, moreover, a great want of European female domestic servants and good coloured male and female domestics.

It is interesting to cull a few items from the last annual official return of the produce and stock of the district: thus it is shown that in addition to the wine and brandy already mentioned, 9,370 muids of wheat, 13,400 barley, 2,340 rye, 37,120 potatoes, and 797,768 bundles of oat-hay were (*inter alia*) produced; and that there were in the division, among other stock, 44,150 Boer goats, 2,680 oxen, and 3,550 pigs.

There is a post-cart to Lady Grey, thirteen miles.

SOMERSET EAST.

Somerset East is a prosperous town with a population of about 3,000, and situated at the base of the Boschberg mountains, sixteen miles from Cookhouse railway station, 126 miles from Port Elizabeth. A railway is being made connecting King William's Town with Somerset East, and will very shortly be opened. It is one of the foremost dairying districts in the Colony. The area of the Division is 2,941 square miles, with 391 farms. The average annual rainfall is 14·96 inches, and March is the wettest month. A locally-formed co-operative dairying company buys up the milk from the surrounding farmers, and makes considerable profit from the distribution of the products far and wide in the province. There are undoubted openings for others to begin in this direction, combined with the breeding of cattle and horses, for which the district is highly suitable; and new comers with a little capital, and a determination to make the best of Colonial peculiarities, with which it will, of course, take a little time to become conversant, are likely to do well on the land in this district. Suitable sites will probably be found for hire or purchase at reasonable rates, but terms had better be arranged with the owners themselves through an experienced

agent on the spot. The rainfall and general water supply for the district together are considerable, and very little difficulty is found on that score. A good deal of the water comes from the Boschberg mountain range, at the foot of which the town is situated.

Fruit culture is merely in its infancy as an industry. Fruit trees of all sorts, so far as climatic conditions allow, might be grown; apples, pears, prunes, and cherries, and kindred sorts of the same family, would thrive well; and in the sheltered level soils, citrus culture is successful and capable of great extension. In short, advanced fruit-growers, either on a large or a small scale, can hardly fail to do well if they can procure their land upon reasonable terms. They are within easy access of good markets, and with the growth of an industrial population it is likely that co-operative companies for fruit-preserving will arise for the convenience and pecuniary benefit of the small growers.

With the addition of an irrigation policy and carefully-arranged works for the purpose, and a renewal of political restfulness in the Colony, it is probable that tradesmen will find openings for stores and workshops; and a few men of the skilled artisan class, such as carpenters, masons, and builders, will probably find good employment at once.

The last return showed an annual yield of 4,503 muids of wheat, 2,152 maize, and 485,505 bundles of oat-hay; and that there were standing in the district 163,579 Merino and 40,968 Cape sheep, 393,686 Angora and 15,803 Boer goats, 614 stallions, 2,963 mares, 2,250 geldings, 15,300 cows and heifers, 9,200 oxen, 19,300 ostriches, and 1,650 pigs.

Post-carts run from Somerset East to Cookhouse, 16 miles; Pearston, 29 miles; Graaff Reinet, 78 miles.

STELLENBOSCH.

VICTORIA COLLEGE, STELLENBOSCH.

With an area of 318 square miles, an average annual rainfall of 26·48 inches, and 105 cultivated farms, Stellenbosch is one of the most prosperous divisions in the Western Province. It is a centre of the wine and fruit-growing industries, and produces an average of over 5,000 leaguers of wine and 170 leaguers of brandy per year. Most of the business undertakings in the town and neighbourhood, and indeed, in most parts of the division, are old-established, and perhaps it might be said old-fashioned. As one drives round the district it is here and there observable that modern methods of cultivation are surely replacing those of the older, more cumbersome, and less profitable order. It is probable that the present population have among themselves many of the factors that will make for the huge increase of prosperity that certainly awaits this richly-endowed district. There is a future of promise for a new comer with capital, experience, and energy, to plant trees and, in many places, make two clusters of fruit appear where only one grew before.

Anything that is planted in this district, due regard being paid to conditions, will grow to perfection, and the proximity to good markets makes a careful business venture in any line of business for which there may be an opening peculiarly attractive.

A reference to the last official annual returns shows that,

among other products and live stock in the district, 38,090 muids of potatoes and 1,177,430 bundles of oat-hay were produced; and that 13,140 Merino sheep, 5,570 Boer goats, and 4,430 pigs were in the district.

Some people in Stellenbosch believe in pigs with the same fervour that this distinctly commercial rural community believes in every other good thing that brings grist to the mill. There is money in pigs, and it seems surprising that larger numbers of these profitable animals are not bred in the Colony, especially in populous neighbourhoods where waste food material is available and the demand for pork and bacon is considerable. Pigs are probably more easily reared than any other animals; they breed well and are always saleable, dead and alive.

The town of Stellenbosch stands at an altitude of 364 feet. thirty-one miles from Cape Town. It has a population of 4,150, 2,630 of whom are coloured.

The district also contains the townships of Somerset West, Somerset Strand, Gordon's Bay, and Kuils River. Besides the rainfall, water is derived from the Eerste river, Lourens river, Moddergat, and Kuil river. There is a large and flourishing jam factory, belonging to Messrs. Sheppard Bros., near Bosman's Crossing.

Stellenbosch is famous for its public schools; the Victoria College and the Stellenbosch public school occupy very fine buildings. There are also the Bloemhof and Rhenish Seminaries for girls, and a Theological Seminary of the Dutch Reformed Church. The district has a bank—the Stellenbosch District Bank, Limited—all to itself, as well as an important branch of the Standard Bank of South Africa, Limited.

STEYNSBURG.

Close to the base of the Zuurberg mountains, on the Cape Government Railway line, is situated the town of Steynsburg, 256 miles from East London, and containing a population of about 900.

The district contains an area of 1,113 square miles, and there are 187 farms. The average annual rainfall is 18·43 inches, and March is the wettest month in the year.

The soil of the district is mostly of a friable nature, and lucerne grows well, and is much used for feeding cows and for

fattening purposes. Any crop that the soil will carry yields fairly well, according to season and market. The principal industry is the breeding of sheep and Angora goats, and a fair amount of business is done in the breeding of large stock.

The price of land is not high, and it would probably be worth while for intending settlers to visit the district.

A few items are here taken from the last official annual report, showing a yield of 5,500 muids of wheat, 157,040 bundles of oat-hay; and there were in the district 116,615 Merino sheep, 35,280 Angora goats, 5,420 cows and heifers, and 2,800 oxen.

STOCKENSTROM.

The area of this division is 314 square miles. The average annual rainfall is 36·04 inches, and March is the wettest month in the year.

Seymour (altitude 2,600 feet), the principal village in the Stockenstrom district, is close to the Katberg mountain, and is sixty-five miles from King William's Town Railway station on the Cape Government Railway. Not far from Seymour is the prettily-situated village of Balfour, at an altitude of 5,000 feet. The whole district is very healthy. There is a sanatorium for invalids and convalescents.

Irrigation is applied wherever practicable. The division is already noted for its tobacco production. This plant is grown extensively, and, so far as it goes, is the best paying crop. There are cigar factories in Seymour, but most of the tobacco is cut by machinery, and sent to other parts of the Colony in bags or tins. Large quantities of leaf are forwarded to Grahamstown and Cape Town for manipulation. The soil and climate are well adapted for the culture of tobacco, the main drawback at present being the ignorance of the growers and their inability to produce an article of uniform flavour and quality.

The cultivation of lucerne for feeding purposes is also progressing, and in importance as a payable culture ranks next to tobacco. The arable land throughout the district is principally of a friable character.

About 4,800 acres are under cultivation in the ordinary way, and about 2,600 acres are more or less irrigated.

According to recent official annual returns, a yield is shown

of 5,390 muids of maize, 3,800 muids of potatoes, and 459,600 bundles of oat-hay, other crops in smaller quantities; and there are in the district 59,674 Merino sheep, 15,562 Angora and 6,320 Boer goats, and, among the larger stock, 4,000 cows and heifers and 2,800 oxen.

Post-carts run from Seymour to Lower Tyumie, 20 miles; Alice (railway), 25 miles; Balfour, 10 miles; and Fort Beaufort, 30 miles.

STUTTERHEIM.

This division has an area of 670 square miles, and there are 195 farms. The annual average rainfall is 29·29 inches, and November is the wettest month. Stutterheim township is situated at an altitude of 2,700 feet, three miles from Kubusie railway station, and has a population of about 500. It is a prettily-situated place at the foot of the Amatola mountains. On account of its healthy climate it is often visited by invalids. It contains three churches and three hotels. It has been found that the district is very suitable for the cultivation of wattle trees, and a local syndicate has been formed with the object of planting and exploiting the trees.

Tobacco is being grown somewhat extensively on the banks of the 'Kubusie river, and a plantation for the growth of the fragrant weed has been started at the Waterford Estate, near Kubusie station. There is also a soda-water manufactory in the village. These industries may be profitably extended by new comers.

If regular rains could be relied upon, about one-third of the land in this district would be suitable for agriculture. As it is, however, barely one-tenth is cultivated with mealies and oat-hay. Wheat does not thrive, and is but little grown.

The land in the district of the consistency of a black friable loam has been selected by the farmers for their crops, and there is a good deal more of the same kind of land in their possession still uncultivated. The average value should be about £3 per acre. There are several German emigrants in the district, who, besides doing a little work for the neighbouring farmers, have small allotments of their own, upon which they do very well. Farms in the district vary in size from 1,000 to

1,800 acres, each of which has on an average a cultivated area of about 50 acres. The farmers wish for the appointment of a Water Board to advise upon water conservation, the boring of dams, and irrigation works generally; and especially as to the feasibility of obtaining a supply of water from the Crown forest lands. They maintain that they could easily apply the water to twenty times the area if it were available.

At Bolo, twenty-one miles north-east of Stutterheim, several families of Scotch emigrants were settled some fifteen or twenty years ago. A good many have moved away to different parts of the Colony, but some of the old families still remain, and are at the present time the prosperous owners of well-tilled and well-stocked farms.

The district of Stutterheim is admirably adapted for fattening stock for the butcher; the sales of slaughter stock at Dohne, on the line of rail, being well patronised by buyers from all parts of the Eastern Province.

Reference to recent official annual returns shows that, among other crops, 13,764 muids of maize, 4,740 muids of potatoes, and 358,893 bundles of oat-hay were produced; and that there are in the division 301,409 Merino sheep, 3,230 Angora and 7,140 Boer goats, 5,110 cows and heifers, and 4,200 oxen.

A post-cart runs to Kubusie, four and a quarter miles.

SUTHERLAND.

The village of Sutherland is situated seventy-five miles from Matjesfontein; and is the centre of a division which is chiefly devoted to sheep pasturage. The area of the division is 4,808 square miles, and there are 249 farms.

About 4,000 acres are under cultivation without irrigation, and about 1,400 acres are irrigated. The soil is of a friable nature, sometimes found as a mixture between sand and pot-clay, as one of the farmers terms it. The principal crop is wheat, and the principal outcry is for storage water, to be conserved from the waste rainfall at the Government's expense. Although the district is at present almost entirely devoted to grazing, the recent annual official returns show, among other crops, a yield of 7,100 muids of wheat and 30,510 bundles of oat-hay; and that there are in the district, among other live stock, 119,873 Merino

An Old Dutch Dwelling.

and 87,457 Cape sheep, 30,670 Boer goats, and about 1,700 ostriches.

A post-cart runs from Sutherland to Matjesfontein railway station, seventy-five miles, twenty-eight hours.

SWELLENDAM.

The area of this division is 2,362 square miles, and the average annual rainfall 25·23 inches; May being the wettest month.

Swellendam, as the visitor enters it for the first time, gives one an impression of prosperity and quiet contentment that is characteristic of many other old Cape towns; it is one of the oldest, and a number of well-to-do families still reside there. It stands 500 feet above sea level, contains a population of about 2,000, and is 134 miles from Cape Town, on the Cape Central Railway line. The surrounding district is hilly and picturesque. The principal products are wool and ostrich feathers, and a considerable trade is done in the gathering and sale of a medicinal herb called boecho, and everlasting flowers. There are the usual churches and a good library. In the near neighbourhood is the small township of Heidelberg. To illustrate the scarcity of skilled labour, it may be mentioned that the Swellendam Anglican Church needs a chancel, and tenders have been called for the work and advertised in the local and Cape Town papers, without eliciting a single response. There are no workmen in the place to do the work, so the worshippers have to be as devout as they can without their chancel. Many other buildings are projected in the neighbourhood, but there are no builders.

White experienced domestic servants receive in some households £1 a week and board and lodging.

Coloured adult labour is remunerated at the rate of 3*s*. a day and a cottage, with from two to four acres of land perfectly free. These terms are given by the present Civil Commissioner, who says that the coloured labourer is thus able to grow sufficient garden produce for his family, and, as he keeps a few pigs and some poultry, he has very little need to trouble the storekeeper.

If the new comer would succeed among country folk he must shake off all ideas about blue blood and nice points about family

descent and pedigrees. With the Dutchman all men are equal if they are white. If they are coloured, well—never mind.

In the adjoining village of Zuurbrak, on the Buffelsjagt River, are settled a large community of Hottentots, each holding an allotment of land, generally very fertile. It is a thriving little village, and there is plenty of room for new comers, who ought not to find much difficulty in securing some eligible land from the Hottentots—probably in small erven, worth from £10 to £20. There is plenty of water.

Requests are made by the farmers in the district for facilities for damming up running streams, and storing the water for irrigation purposes.

Tobacco and potatoes are the best paying crops, while barley and mealies, owing to the fact that good returns are invariably got from their cultivation, are staple products.

Recent annual official returns show that, among other products, there was a yield of 6,060 muids of wheat, 15,790 of barley, 5,350 of oats, 16,300 of potatoes, and 635,068 bundles of oat-hay; and that there were in the division 141,513 Merino and 12,160 Cape sheep, 22,750 Angora and 50,160 Boer goats, 670 stallions, 2,030 mares, 1,090 bulls, 5,860 cows and heifers, 3,860 oxen, 6,040 ostriches, and 3,080 pigs. The returns also showed a yield of 380 leaguers of brandy.

Post-carts run to Heidelberg, 35 miles, 5 hours; Riversdale, 55 miles, 8 hours; Mossel Bay, 110 miles, 17 hours; George, 150 miles, 22 hours; Avontuur, 200 miles, 31½ hours; Humansdorp, 295 miles, 48½ hours; Port Elizabeth, 345 miles, 57½ hours; Barrydale, 26 miles, 3 hours; Caledon, 12 hours.

TARKA.

The area of this division is 1,427 square miles.

Tarkastad, the principal town in the division of Tarka, with a population of 1,250, is situated on the Cape Government Railway line fifty-two miles across country east of Cradock, at an elevation of 4,300 feet. It is a well-appointed place, with ample water supply, good hotels, and a town-hall and library. The local newspaper, the *Tarka Herald*, is an influential and up-to-date organ. The climate is dry and bracing, suitable for invalids.

The average annual rainfall is 18·76 inches, January being the wettest month.

The land is very good for agriculture and pasture. Ostrich-farming pays well, and is extensively followed. The farmers, most of whom are progressive, up-to-date cultivators, have a well-established belief in the future of their district, and in the fulness of this faith one of the residents suggests that Government should advance money, at a low rate of interest, to farmers to be spent exclusively on the work of dam-making, a Government engineer to select suitable sites, estimate the cost, and advise the farmers thereon. This resident said that if he could store water he could irrigate 1,400 acres instead of the 400 to which he now applies periodical wettings. He has also 1,200 acres under ordinary cultivation for wheat, mealies, lucerne, root crops, oat-hay, and barley, the best of which is wheat.

Another farmer has recently completed a water service by laying down a mile and a half of four-inch pipes, with the object of extending his irrigation supply, and he now asks for the advice of a Government engineer upon the best way to throw a weir across a narrow gorge eighty yards wide, between two krantzes, which would give over 1,000,000 gallons of storage water, and enable him to irrigate 1,000 acres of land.

The soil of the district is capable of producing all kinds of crops. If the faith of the Tarka farmers in the future of their district under irrigation is well founded, as it seems to be, it would be probably worth while to construct a light line of railway to the main line, for a large irrigation undertaking can only be thoroughly successful if provided with quick and cheap facilities for forwarding produce to market. Were there a prospect of this, private enterprise would probably readily provide for the construction of the irrigation works. In the meantime the making and keeping of good roads to facilitate transit would be a step in the right direction. It may be urged for the farmers that while irrigation schemes are questions affecting their individual interests, the cost of which should consistently be borne by the irrigators, railways and good roads affect the general public and the prosperity of a whole district, so that this cost should be borne by the community or governing body.

There seems to be no doubt that promising districts like

Tarka remain backward and undeveloped because they are out of the way and virtually inaccessible for commercial purposes.

The rainfall in most parts of the division is sufficient for cultivation in ordinary seasons, but the past six years' experience has proved the desirability of conservation and drilling for water for reserve purposes.

A resident in the neighbourhood estimates the value of ordinary unirrigated but cultivated land at £2 per acre, and of the same kind of land irrigated at £8 per acre.

The soil in the valleys is the deep black loam and clay subsoil (becoming friable under the influences of the plough and frost) that is characteristic of the alluvial lands of the Colony. Higher up out of the valley the soil becomes more of the nature of a sandy loam.

Among other crops produced in the district, a yield is shown by the last annual official return of 12,330 muids of wheat, 2,240 of potatoes, and 448,995 bundles of oat-hay; and standing in the district are, among other live stock, 206,649 Merino and 6,000 Cape sheep, 52,590 Angora goats, 360 bulls, 7,900 cows and heifers, and 4,920 oxen.

Post-carts run to Cradock, forty-seven miles, nine hours; and to Spring Valley, twenty miles, five hours.

TULBAGH.

The area of this division is 373 square miles.

Tulbagh, the principal town in the division, with a population of about 700, is situated (four miles from the Tulbagh Road railway station) in low-lying country almost encircled by the Winterhoek and Witzenberg mountains. The wild flowers of the Karroo and veld grow very profusely in the district. Tobacco, maize, wheat, oat-hay, and barley are produced by the farmers, and could probably be much increased if modern farming methods were adopted as far as possible. The value of land in the district, according to the farmers' own estimate, warrants a visit of inspection by the new settler, especially as the rainfall is usually sufficient for ordinary cultural purposes, and the land, generally speaking, is fairly easy to work. It is also an advantage to the district to be close to the main railway line to Cape Town.

The average annual rainfall is 21·68 inches, and May is the wettest month in the year.

Various crops are grown in the district, and among those shown in recent official annual returns were 12,050 muids of oats, 435,547 bundles of oat-hay, 2,947 leaguers of wine and 289 leaguers of brandy; and the return shows that there were in the district, 10,200 Merino sheep, 8,390 Boer goats, 3,440 pigs, and various other live stock.

UITENHAGE.

The area of this division is 2,973 square miles.

Uitenhage is one of the oldest towns in Cape Colony. It is situated in the valley of the Zwartkop river, on the Cape Government Railway, twenty-one miles from Port Elizabeth. It is 170 feet above the sea, and has a population of 7,000, with an average annual rainfall of 18·54 inches, and November is the wettest month.

The railway works and wool-washing industry afford employment to many townspeople. Fruit and flower culture are extensively carried on in the suburbs, and irrigation enters extensively into these operations. There are some large salt-pans in Uitenhage used for curing purposes, and from which large quantities of salt are taken and sold. Three progressive newspapers are published—namely, the *Uitenhage Times and Government Gazette*, the *Chronicle*, and the *Coloured South African*.

The public offices form a fine block of buildings, and were erected at a cost of £20,000. There are five churches belonging to the different denominations, and an excellent public library. Riebeek College and other schools are of such an order as to leave nothing to be desired in reference to the efficient education of the youth of the district.

Uitenhage has the advantage of a very good water supply, which is brought from a copious spring at the foot of the Winterhoek mountains.

Judging from the success of the flower and fruit nurseries of an enterprising firm in Uitenhage (success that has been enhanced by the proper use of irrigation), it seems probable that there is room for new comers in this part of the world

to open up similar businesses. It is well worth the visitor's while to obtain permission to go over Messrs. Smith Bros.' vineyards near the town. They are the largest in the Eastern Province, and the aspiring cultivator cannot do better than gather some encouragement and useful knowledge from the object lesson afforded by this ideal vineyard and nursery.

As to agriculture generally, the best paying crops in the district are potatoes, onions, and lucerne.

No one should visit the Uitenhage division without inspecting the irrigation works of the Sundays River Estate and the irrigation farm belonging to Mr. Frederick Frank at Blue Cliff. There will be seen good practical working illustrations of the results of the utilisation of those intermittent torrential streams that usually do more harm than good by ploughing up the country far and wide, unfitting it for anything except military entrenchments.

According to the latest official annual returns, 28,887 muids of potatoes and 601,460 bundles of oat-hay were, among other things, produced in this district; and there were in the division 16,840 Merino sheep, 148,350 Angora and 10,020 Boer goats, and, among large stock, 470 bulls, 9,530 cows and heifers, 6,780 oxen, and 19,866 ostriches.

UNIONDALE.

The township of Uniondale is a comfortable little place with about 900 inhabitants, with hotel and boarding-house, in the wheat-growing district of Uniondale. The district is one of the most promising in the Colony, and has an area of 1,690 square miles. The total population is 10,100, including 5,400 coloured persons. There is not much sterile soil, and with a wider application of irrigation and the adoption gradually of up-to-date methods of farming, and the use of improved implements, Uniondale bids fair to become very prosperous. Tobacco is the best paying crop, and the climate seems admirably fitted for its cultivation. Mealies, wheat, and oats yield fairly good crops, and the soil, generally speaking, is of a friable nature, consisting alternately of black loam and red Karroo, fairly easy to work.

Cart and waggon building is profitably carried on in the township, there being plenty of wood for the purpose near at hand, and the climate being suitable for seasoning purposes.

Butter and cheese making, bacon-curing, the growing and drying of fruit, and the manufacture of cheap boots and "veld schoens" are industries that are worth the attention of new comers.

About one-third of what is known as Long Kloof land is suitable for agricultural purposes as distinct from pasturage. In the Karroo good places are to be found for the conservation of water for irrigation purposes.

A reliable local valuation of the lands suitable for cultivation with and without irrigation places irrigable Karroo land at £25 to £30 per acre, Karroo dry lands 30*s.* to 50*s.* per acre, and Long Kloof dry lands 20*s.* to 30*s.* per acre.

The annual rainfall is fourteen inches, and August is the wettest month.

As the country opens up, as it will probably do very quickly after the removal of military restrictions, there will probably be openings for carpenters, masons, blacksmiths, and so on, and probably for skilled agricultural labour.

The last annual return which was taken of the produce of the district showed a yield of 15,407 muids of wheat, 2,500 barley, 3,400 maize, 3,300 potatoes, and 969,580 bundles of oat-hay; and that there were in the district 31,009 Merino and 5,150 Cape sheep, 45,787 Angora and 13,942 Boer goats, 212 stallions, 779 mares, 713 geldings, 1,070 mules, 1,000 asses, 221 bulls, 3,500 cows and heifers, 3,000 oxen, 5,300 ostriches, and 2,100 pigs.

Post-carts run to Willowmore, forty miles, and Avontuur, nine miles.

VICTORIA EAST.

The area of this division is 384 square miles.

Alice is the chief town, and is situated close to the surveyed course of the new line of railway which will pass through the district with a station at Alice. The town contains an hotel; and the *Alice Times* newspaper is a very creditable journal, and circulates widely. The district is an exceedingly fertile and progressive agricultural one. Although a large area is available, little or no cultivation has yet been done. It is noteworthy, however, that wherever the plough has broken up the land, and crops have been sown, the best possible results have been obtained with the exercise of proper care. Cattle and sheep

thrive well, and a good deal of fruit is grown with satisfactory results in the Tyumie Valley; and along the coast of Peddie subtropical fruits grow in profusion. There are openings in this district for settlers on the land, the value of which does not seem too high, and the man who goes with his cheque-book in his pocket can usually make an advantageous bargain with somebody who can spare a few broad acres.

Although the average annual rainfall is over thirty-two inches, it is insufficient in some parts of the district.

Interviews with some of the farmers in the district elicited the opinion that if money were advanced at a reasonable rate of interest a number of farmers would go in for irrigation schemes to a greater extent than they are able to do at present. It is estimated that about 50,000 acres are cultivated without irrigation, and about 1,500 acres irrigated. The greater portion of the soil in the district is of a stiff nature. Large quantities of maize are grown, and it is the staple crop of the district, although tobacco, as far as it goes, pays the best.

The annual yield of produce, according to the last return, is 145,262 bundles of oat-hay, and 9,163 muids of maize and 1,879 of potatoes; and at the same time there were 44,100 Merino sheep, 1,845 Angora and 15,619 Boer goats, 299 bulls, 7,000 cows and heifers, 4,800 oxen, 1,800 ostriches, and 1,600 pigs.

Post-carts run from Alice to King William's Town, 40 miles; Fort Beaufort, 14 miles; Lower Tyumie, 9 miles; Seymour, 25 miles; Breakfast Vlei, 26 miles.

VICTORIA WEST.

The area of the division is 4,239 square miles.

A visitor to Beaufort West will find in the town of Victoria West very similar conditions, except, of course, that it stands at a much higher elevation, and consequently possesses a much colder winter climate.

Good hardy stock of all kinds thrive well in the district, which is the best in the Western Province for stock-raising.

An interview with the Resident Magistrate of the district elicited the information that the farmers experience considerable

difficulty in getting competent men to perform farming work, especially such help as is requisite in connection with the construction of dams and erection of windmills, and other work that requires more than the skill of the ordinary labourer.

About 2,500 acres are cultivated without irrigation and 1,000 acres are irrigated. The soil is in many parts of the district of a friable nature, although most of it is of the stiff kind.

The last return showed an annual yield of 1,350 muids of wheat, 1,040 potatoes, and 61,397 bundles of oat-hay; and that there were in the district 315,827 Merino and 30,208 Cape sheep, 15,575 Angora and 28,806 Boer goats.

The population of the district is 7,800, over 4,000 of whom are coloured.

The Victoria West township stands at an altitude of 4,100 feet, eight miles from Victoria West Road station, on the Cape Government Railway. It has a population of 1,100, 300 of whom are coloured. A good deal of fruit is grown in the district.

Post-carts run to Victoria West Road station, 8 miles, $1\frac{1}{4}$ hours; and to Phizantefontein, 50 miles, 13 hours.

The average annual rainfall is 12·68 inches, March being the wettest month.

WILLOWMORE.

The town of Willowmore contains a population of 1,000, about 500 of whom are coloured. The climate is a healthy one, dry and bracing, and is very suitable for invalids. The products of the district are wool, mohair, ostrich feathers, tobacco, raisins and other fruits, butter, sheep, goats, horned cattle, and ostriches. As usual the farmers make the best use of what water they can get for irrigation purposes, but with a rainfall of nine and a half inches, and very little water from other sources, agriculture is unavoidably in a backward condition. March is the wettest month in the year. There appear to be many places in the district suitable for the construction of irrigation dams.

Steytlerville is a thriving village nineteen miles west-south-west of Barroe station—population 290 white and 230 coloured people. The village is supplied with good water, and the ground

is exceedingly fertile. In the Baviaan's Kloof a large extent of ground is under cultivation, the principal crops being mealies and oats. The soil is very fertile, but it is not under irrigation. The value of ground throughout the district varies from 7*s.* 6*d.* to 20*s.* per acre. This district will, no doubt, benefit by the opening of the Oudtshoorn-Klipplaat railway line.

The last returns show an annual yield of 1,328 muids of wheat, 782 muids of potatoes, and 275,520 bundles of oat-hay; there were at the same time in the division, 59,832 Merino and 41,692 Cape sheep, 217,255 Angora and 14,861 Boer goats, 311 stallions, 861 mares, 990 geldings, 330 mules, 1,920 asses, 380 bulls, 3,330 cows and heifers, 2,848 oxen, and 7,750 ostriches.

Post-carts leave Willowmore for Steytlerville, 60 miles; Barroe station, 79 miles; Vondeling, 30 miles; Klaarstroom, 63 miles; Prince Albert, 100 miles; Prince Albert Road station, 128 miles; Uniondale, 40 miles.

The area of the division is 3,498 square miles.

WODEHOUSE.

Dordrecht is the principal town in this division. It is situated at an altitude of 5,500 feet, two and a half miles from the railway station. It contains a population of over 1,100, of whom 500 are coloured people. There is a branch of the Standard Bank, post, telegraph, and money-order offices, public buildings, churches, and hotels. The town is well watered by pipes from the New Dam, from wells and from rainwater tanks. There is a good newspaper in the district, the *Frontier Guardian*. The climate is very healthy, and the winters are dry and cold. The farmers in the neighbourhood say that the rainfall is sufficient for agricultural purposes in one year out of five, although the annual average of twenty-four inches gives the careful cultivator a good chance to keep his crops going. Most of the farmers who apply irrigation either conserve the water in small dams or get it from wells. One of the farmers says that he could irrigate about 100 acres (in addition to the fifty or sixty that he cultivates without irrigation), but he does not do so because, where water is available, the land is in a vlei, and he prefers to keep the grass for winter feed. The soil throughout

Photo by] MOUNTAIN SCENERY, WORCESTER. HEX RIVER VALLEY. [*J. Meiring.*

the district is a medium between stiff and friable. Most of the plains are of this consistency, and may be described as sandy loam. The valley soils are a rich black loam, very fertile, and the farmer was not far wrong who said that it was probably equal to any soil in the world.

Want of capital among the majority of the farmers seems to be the only thing that prevents their increasing the value of their land by dam-making and other irrigation works. One prominent farmer urges that a commission consisting of a Government hydraulic engineer and two practical local farmers should inspect the best sites for impounding water, and that a subsidy, on the £1 for £1 basis, should be given by Government towards the works, or that some other practicable terms should be arranged for the purpose of forwarding the cultivation of the land by artificial water supply.

There are some very prosperous farms in the district. On one of these, the Carnarvon farm, 2,400 acres are cultivated without irrigation, and 1,000 acres are irrigated.

Potatoes appear to be the most profitable crop in the district; oat-hay comes next.

The annual yield of produce, according to the last return, is 12,417 muids of wheat, 1,712 barley, 6,287 maize, 18,560 potatoes, and 427,496 bundles of oat-hay; and the live stock in the district were 286,694 Merino sheep, 23,606 Angora and 1,990 Boer goats, 450 stallions, 3,150 mares, 2,150 geldings, 940 bulls, 10,200 cows and heifers, 6,900 oxen, and 1,060 pigs.

Post-carts leave Dordrecht station, 3 miles; Barkly East, 66 miles; Jamestown, 27 miles.

March is the wettest month in the year.

WORCESTER.

The area of this division is 2,623 square miles.

The picturesque town of Worcester is the chief town of the division which bears its name. It is so well known that a long description is scarcely necessary. It stands 794 feet above the sea level, has a population of 5,500, and is close to the foot of the Hex River mountains, whence a copious supply of water runs into the district. The town is well laid out, and derives its

water from the above source. Almost throughout the year the channels in the streets are kept flushed and cleansed with the fresh mountain water running rapidly through them. Although the town itself is so well watered, the surrounding country could do with some of it; water for irrigation, which is widely practised by the farmers in a small way, being as scarce in the country side, beyond Worcester, as it is plentiful in the town and close neighbourhood.

The rainfall is nearly twelve inches, and June is the wettest month.

The principal industries, apart from that of viticulture, are waggon and cart building, the wood used for which is brought from the Knysna forests. There are probably few openings for new comers at present, except perhaps for small farmers on the surrounding agricultural lands, where, owing to the climatic conditions and the excellence of the soil in most places, good crops of potatoes, barley, and oat-hay are obtainable; and if the prices asked by the farmers for any land that they are disposed to sell are not prohibitive, there is every prospect of profitable settling places being found in the Worcester district.

A considerable portion of the district is devoted to pastoral pursuits.

The farmers in the division are almost unanimous in urging Government measures for carrying out irrigation works on a large scale, and they offer intelligent advice and suggestions upon the best methods of making dams and reservoirs and the most suitable sites for the same; and there is the same unanimity upon the question of water supply and its sufficiency or insufficiency, the verdict being that nothing to forward the principal industry of the division can be done without irrigation. There would probably be no difficulty in conveying the life-giving fluid from the points of its appearance in the division to the different farms throughout. It would be easy for a properly-qualified engineer to decide what has to be done, and he would find that the intelligence of the farming constituency in following out his instructions and co-operating with him would be so satisfactory as to considerably minimise the cost of an irrigation undertaking. The same may be said of similar districts throughout the Colony.

Photo by] MOUNTAIN SCENERY, WORCESTER. HEX RIVER VALLEY. (VINEYARDS.) *[J. Meiring.*

Bullock Waggons Fording a River.

The last returns show an annual yield of 6,860 muids of wheat, 9,988 of barley, 1,699 oats, 5,000 rye, 2,500 maize, 6,225 potatoes 642,584 bundles of oat-hay; and that there were 37,810 Merino and 27,403 Cape sheep, 2,000 Angora and 35,600 Boer goats, 262 stallions, 1,150 mares, 1,021 geldings, 1,107 mules, 415 bulls, 5,247 cows and heifers, 2,468 oxen, 1,470 ostriches, and 4,630 pigs.

Post-carts run to Villiersdorp, thirty-one miles, and Caledon, fifty-five miles.

NATIVE TERRITORIES.

TRANSKEI, TEMBULAND, GRIQUALAND EAST, PONDOLAND.

Between the Great Kei river and Natal there lies a stretch of country so rich in undeveloped natural agricultural resources that its importance can hardly be exaggerated, and its future scarcely over-estimated. Generally speaking the land is peopled by different tribes of natives; but in the districts of Butterworth and Elliot, in Tembuland, and Mount Currie, Maclear, and Matatiele, in Griqualand East, there is a considerable number of European farmers of the advanced and progressive type, who are making their influence felt in the territory. They have worked wonders on their farms and holdings. Fencing of a most substantial nature has been erected, and comfortable well-built homesteads may now be seen on ground which, ten or twenty years ago, was considered worthless on account of the long, hard, sour grass with which it was covered. On the majority of farms sheep, cattle, and horses of superior breeds are to be found, and wool from these parts always fetches high prices, and is eagerly sought for. No other part of South Africa has yet achieved the results attained by the farmers in this portion of the country in reference to providing for the winter feeding of their stock; and their well-tilled fields of turnips, hay, and winter oats present an object lesson which could be learnt with benefit by stock-owners in other parts of the Colony. The rainfall is evenly distributed, and an early spring can generally be relied on. The ground is fertile, and large crops are more the rule than the exception. The territories of the Transkei, Tembuland, Griqualand East, and Pondoland contain about 22,000 square miles, and have

a population of about 580,000, of whom over 10,000 are whites. Two roads, one from Kei Road and another from Queenstown, have been opened up, and join near Kokstad, in Griqualand East. A railway is projected from St. John's River to Maclear. Mail-carts leave Kei Road and Queenstown for Kokstad.

Kokstad, the chief town of Griqualand East, is situated on a high plateau at the base of Mount Currie. There is an abundant water supply; trees grow with ease and rapidity, and the large substantial buildings erected during recent years give the place an air of comfort and prosperity, which is most refreshing to the traveller who alights from his long post-cart journey. Kokstad, being the centre of a large and prosperous district, has a great future before it. The Agricultural Shows and sales of stock held here are celebrated throughout the territories, whilst large numbers of slaughter stock annually pass through the town bound for Natal. Maclear and Matatiele are also thriving villages, which have advanced wonderfully during the last few years. Both places depend largely on trade with the natives.

Umtata, the chief town of Tembuland and the Transkei, is the headquarters of the Cape Mounted Rifles, and is situated on the banks of the Umtata river, which separates the territories from Pondoland. The town can boast of large public buildings, and a thriving trade is carried on with the surrounding natives. Butterworth, Cala, Elliot, and Idutywa are also prosperous centres, all more or less engaged in trade with the coloured population. The whole of this part of the country is heavily stocked, every acre of ground being taken advantage of either for agriculture or pasture. Ten years ago the wool exported from the native territories was of a very inferior and badly-grown quality. Since the introduction of scab legislation, however, a great change has been effected. Improved breeds of sheep have been introduced; scabby stock are now exceptional, and consequently the clips sold by the natives realize good prices, and compare favourably with wool grown in many parts of the districts peopled by Europeans. Large quantities of grain, principally maize and Kaffir corn, are also produced. Tobacco grows luxuriantly, and, with care, should develop into an important industry. Coffee also thrives along

the coast, and capital and enterprise alone are necessary to make this branch of farming highly remunerative. In these districts sheep do not thrive as they do in the proper sheep districts of the Colony, but the common or Boer goat is kept in large numbers. At the present time the only source of communication is by cart and ox-waggon. When the railway is completed and the country opened the quantity of grain produced will probably be enormous, and the prosperity of the Territories increased and assured. Valuable forests exist, which Government is endeavouring to protect from the depredations of the natives, and which will find employment for much labour and capital in the future, when the country is opened up by railways.

The latest annual returns from East Griqualand show that (*inter alia*) 199,012 muids of maize, 13,245 muids of potatoes, and 1,783,576 bundles of oat-hay were produced; and that there were in the district, among other live stock, 2,940 stallions, 27,600 mares, 20,100 geldings, 6,180 bulls, 82,600 cows and heifers, 33,050 oxen, 689,714 Merino sheep, 46,938 Angora and 187,251 Boer goats, and 24,800 pigs.

In Tembuland the population is about 335,000, of whom only 7,000 are whites. Nearly all the territory is occupied, but land can sometimes be rented from private persons at about 1*s.* per acre. To gain a living the farmer must keep stock as well as grow grain; he should have not less than 500 acres, and £100 capital. The principal places are St. Marks, 35 miles from Queenstown by road, in an agricultural and pastoral district; Cala, 63 miles by road from Queenstown; and Umtata, 150 miles by road from King William's Town, and 65 from the small port of St. John's, situated in an undulating country well suited for stock and agriculture.

GRIQUALAND WEST.

Districts of Hay, Herbert, Barkly West, Kimberley.

North of the Karroo is the diamond-producing, thinly-populated province of Griqualand West. It is undulating; much of the soil is a rich red loam, and is watered in part by the Orange and Vaal rivers, but the farmers find they have to store the rain which falls in the wet season between October and March in reservoirs in order to guard against droughts.

Maize, grain, and fruits grow where there is enough water; and, among minerals, asbestos is plentiful. Kimberley is the chief town.

The population of Kimberley is 29,000, nearly half of the inhabitants being whites. The climate is healthy, but very hot in summer; in winter the nights are cold. House-rent, wood, water, and fuel are very dear, but wages are high. In the West Barkly district, pastoral industries and diamond-mining are carried on. Diamond-diggers are also to be found along the Vaal river, as well as a few farmers, who practise a little irrigation. An irrigation scheme has been accomplished at Warrenton, and good results are being obtained.

BECHUANALAND.

In Bechuanaland there are five organised districts—Mafeking in the north, Vryburg in the centre, Taungs and Kuruman in the south, and Gordonia in the south-west. Mafeking is the largest European township; besides dealing with Kimberley, it does an extensive trade with the Protectorate natives, with the Dutch on the north-west side of the Transvaal, and with the Transvaal goldfields at Malmani, twenty miles distant. Vryburg is a healthy township, and has got a good water supply.

Bechuanaland is essentially a cattle-producing country. Much of the timber in Bechuanaland, unfortunately, has been, and is still being, cut down and sold in the Kimberley market for fuel, although South African coal is now also being used.

The disposal of Crown lands in Bechuanaland is now the same as in the older parts of Cape Colony; but much of the suitable land remaining unsold belongs to the railway, as part of their land grant. Railway land amounting to 6,000 square miles along the railway, from Vryburg to Mafeking, is sold subject to a quit-rent of not less than £1 per 1,000 acres; or at public auction for money payable by instalments. (See Land Laws, page 24.)

A grazing farm should be not less than 6,000 acres in area; this will require £500 capital at least, exclusive of the price of the land. A dam, which is usually necessary, costs £100 to

£300 in addition. The land at present opened up for settlement does not require clearing. A waggon, trek-gear, and oxen complete cost about £190; oxen cost £3 10*s.* to £5 each in ordinary times, and twelve to twenty are required for each waggon. Horse sickness is very common.

Vryburg.

The district of Vryburg is very good for cattle-farming. There has been a considerable increase in the number of farms occupied during the past few years, and land in the western portion of the district has been taken up for cattle by farmers from the Transvaal and Orange River Colonies. In a few parts of the district dairy-farming and market-gardening would pay; the capital required would be £250 to £300. Since the extension of the Cape railway system to Mafeking and beyond, much of the carrying trade to the north has been lost to Vryburg, which is now dependent upon the local farming community. This, as already mentioned, has increased, and the value of the farm properties has risen. Cattle, sheep, and goats have increased in number, but cattle suffer very much from lung sickness, and rinderpest has caused great damage; horse sickness is also prevalent. Agriculture suffers at times from the presence of large swarms of locusts. The rainfall is about twenty-five inches a year, most of the rain falling between December and the following March.

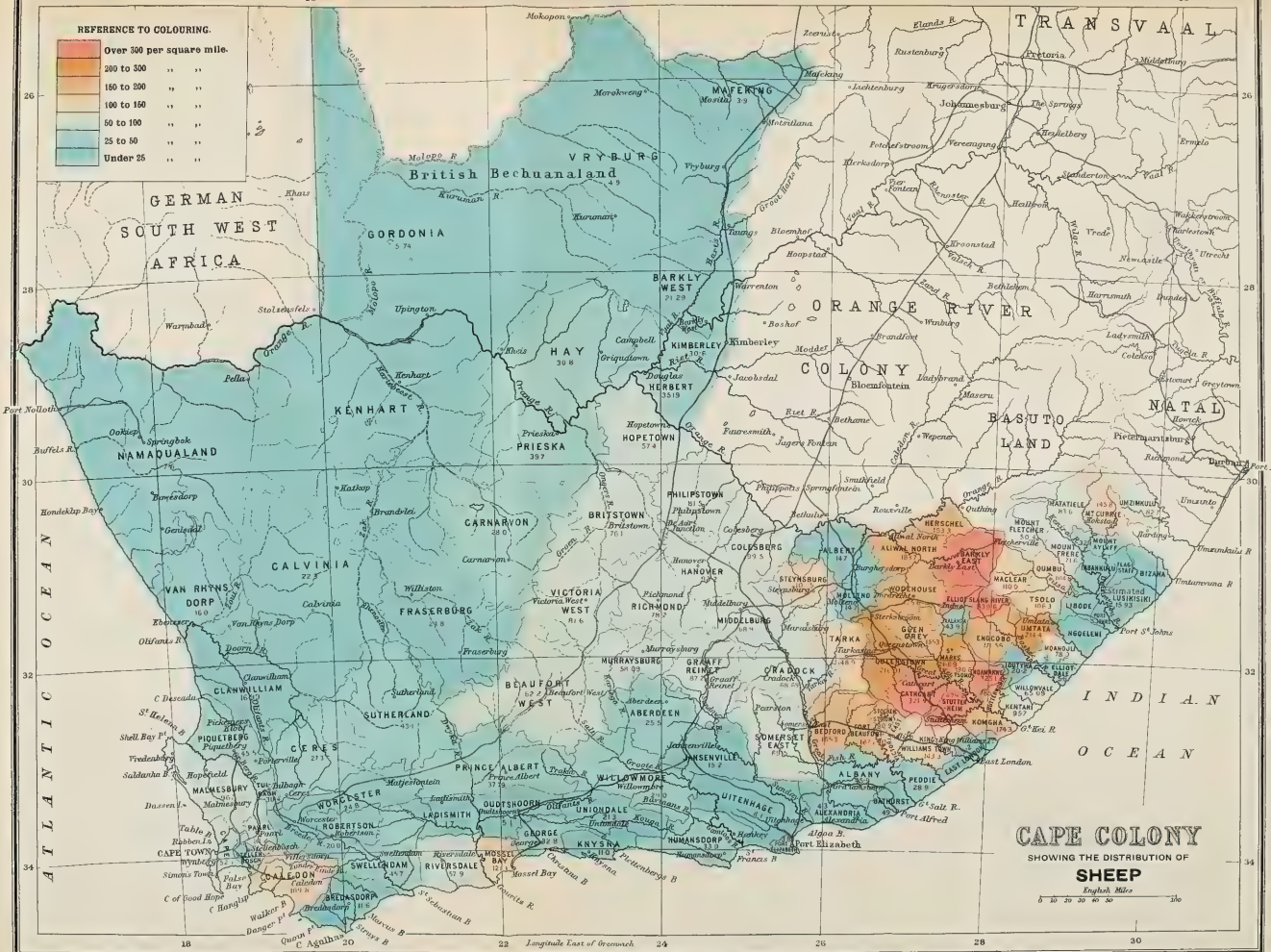
Mafeking.

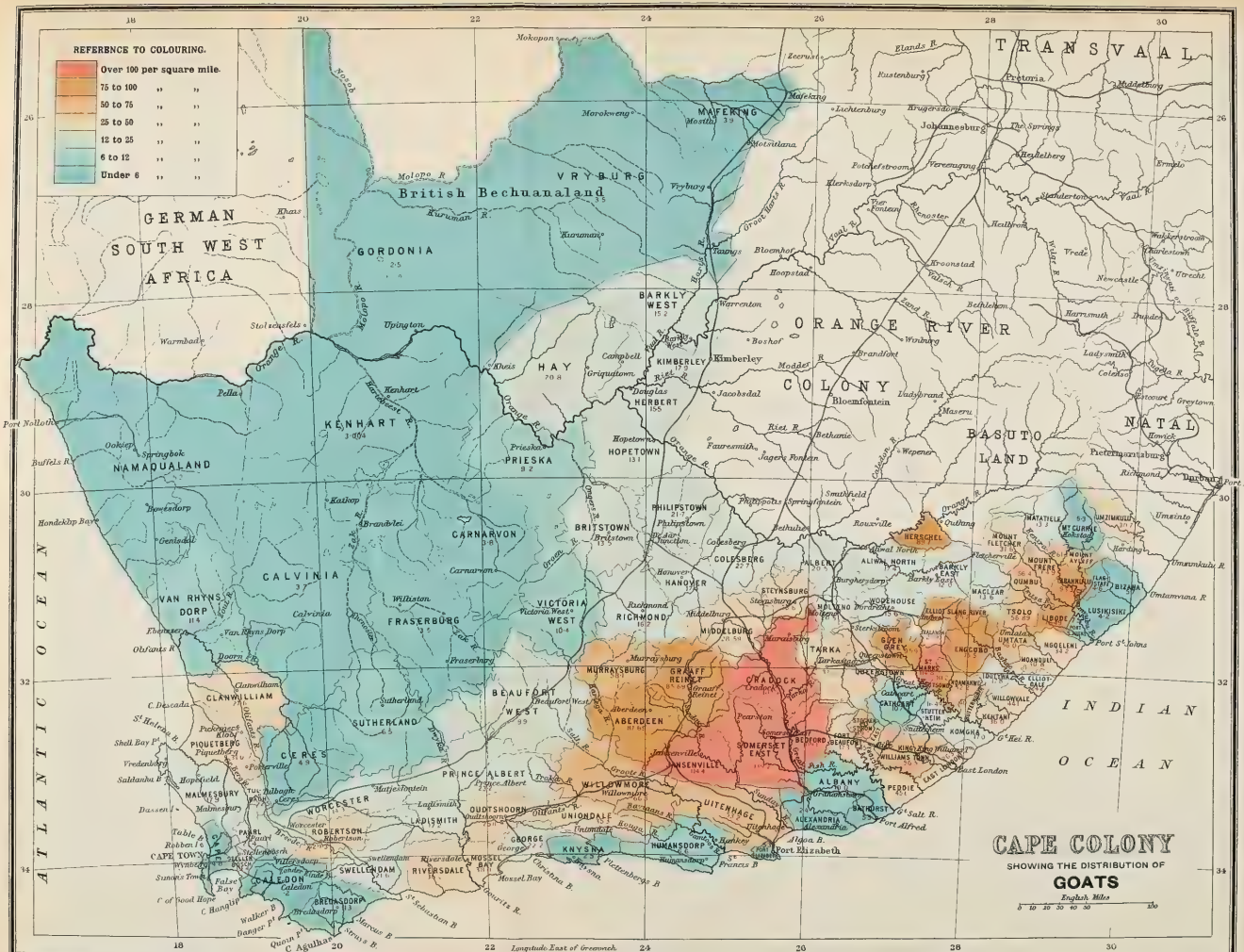
In the district of Mafeking farmers have made steady progress. The town is increasing in size, and water is laid on; tree-planting is also being encouraged. A public school has been started. Garden plots along the Molopo are cultivated with vegetables, which are sold at reasonable rates. The whole district is specially suitable for cattle, and many farmers from Natal and the Transvaal Colony have come and bought farms.

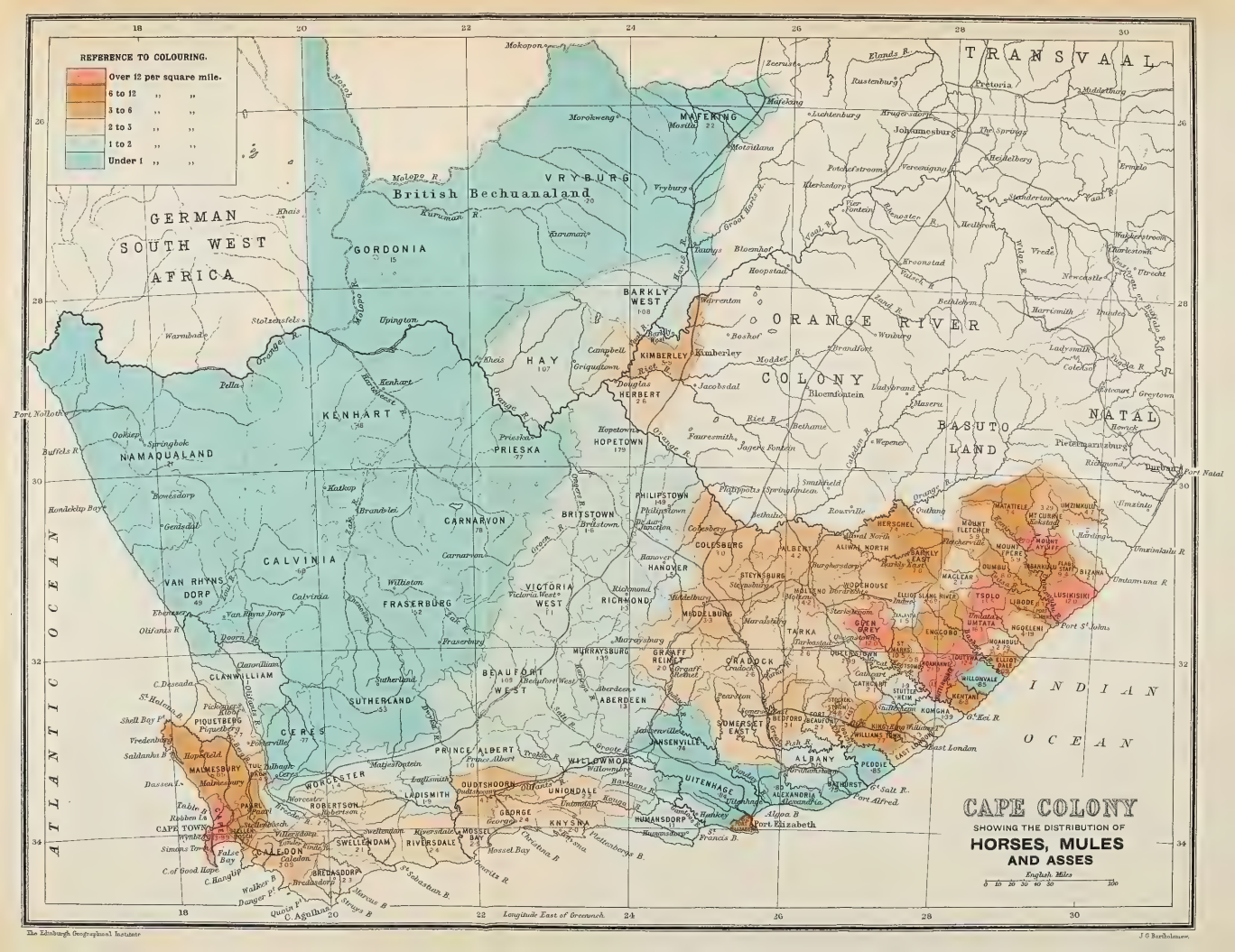
Gordonia.

The district of Gordonia has, from its proximity to the Orange river, peculiar facilities for irrigation, which is throughout the

whole of Bechuanaland an expensive but necessary condition of successful farming. It is essentially a cattle and sheep breeding district, and exports annually several thousands of cattle and small stock. Farms are from 6,000 to 60,000 acres in size, and a capital of from £500 to £600 is required. The rainfall at Upington, the chief settlement in the district, is sometimes not more than nine inches a year.

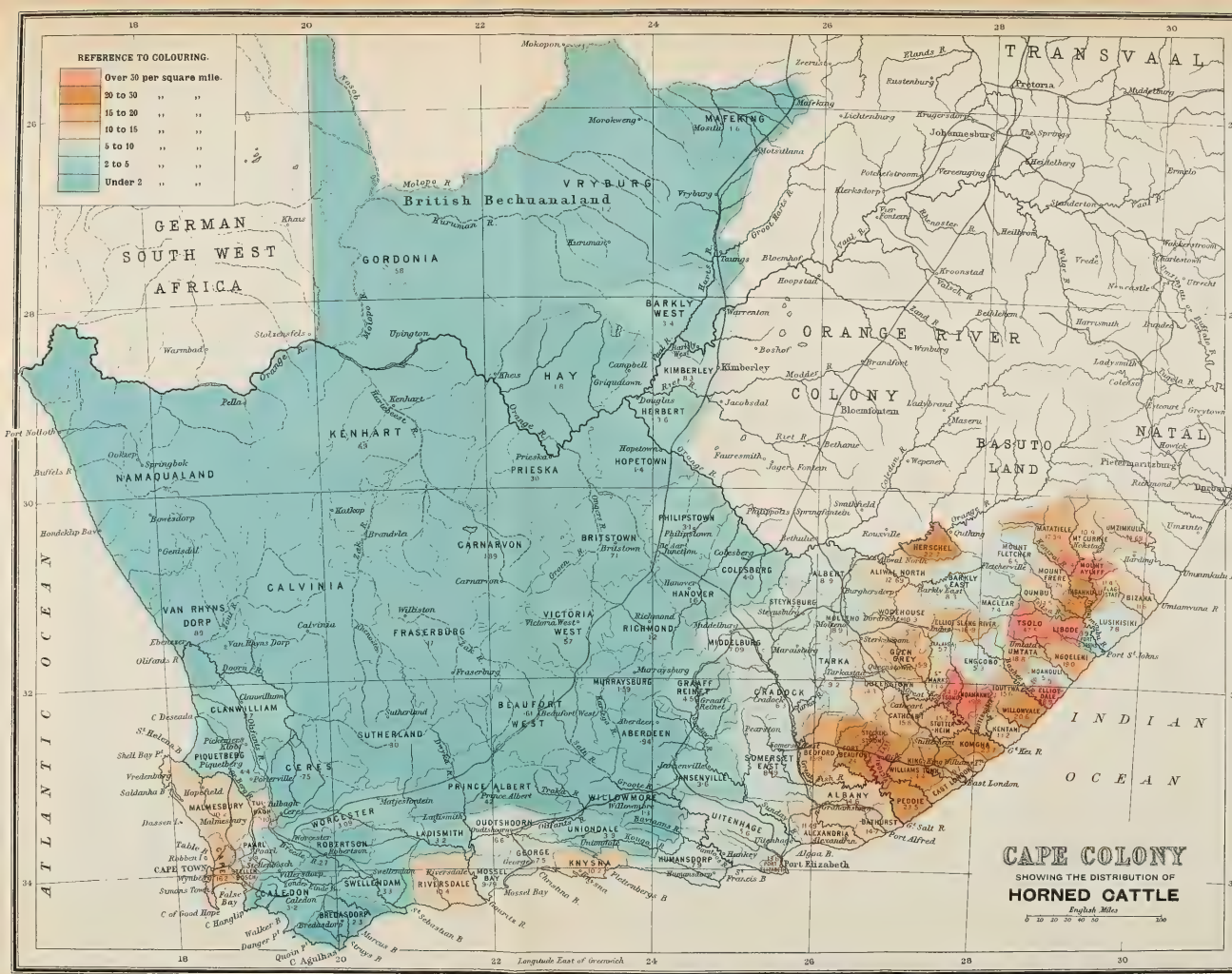

REFERENCE TO COLOURING.
Over 300 per square mile.
200 to 300 ,, ,,
150 to 200 ,, ,,
100 to 150 ,, ,,
50 to 100 ,, ,,
25 to 50 ,, ,,
Under 25 ,, ,,
CAPE COLONY
SHOWING THE DISTRIBUTION OF
SHEEP
English Miles
0 10 20 30 40 50 100
TRANSVAAL
ORANGE RIVER COLONY
NATAL
BASUTO LAND
British Bechuanaland
GERMAN SOUTH WEST AFRICA
GORDONIA
KENHART
PRIESKA
HAY
KIMBERLEY
HERBERT
HOPETOWN
BARKLY WEST
VRYBURG
MAFEKING
NAMAQUALAND
CALVINIA
VAN RHYNS DORP
FRASERBURG
CARNARVON
BRITSTOWN
PHILIPSTOWN
VICTORIA
RICHMOND
MIDDLEBURG
COLESBERG
HANOVER
STEYNSBURG
ALBERT
ALIWAL NORTH
BARKLY EAST
HERSCHEL
MOUNT FLETCHER
MACLEAR
TSOLO
LIBODE
ENGCOBO
TARKA
GLEN GREY
UMTATA
NGQELENI
KOPDHOUSE
ELLIOT
SLANG RIVER
TSOMO
KOMGHA
KENTANI
WILLOWVALE
CRADOCK
MURRAYSBURG
GRAAFF REINET
BEAUFORT WEST
SUTHERLAND
CLANWILLIAM
PIQUETBERG
CERES
PRINCE ALBERT
WILLOWMORE
ABERDEEN
SOMERSET EAST
BEDFORD
ALEXANDRIA
ALBANY
PEDDIE
WORCESTER
LADISMITH
OUDTSHOORN
UNIONDALE
UITENHAGE
ROBERTSON
MALMESBURY
CAPE TOWN
SIMONS TOWN
WYNBERG
CALEDON
SWELLENDAM
RIVERSDALE
GEORGE
KNYSNA
HUMANSDORP
MOSSEL BAY
PORT ELIZABETH
PORT ALFRED
KING WILLIAMS TOWN
WILLIAMS TOWN
EAST LONDON
GRAHAMSTOWN
BATHURST
ATLANTIC OCEAN
INDIAN OCEAN
Longitude East of Greenwich
The Edinburgh Geographical Institute
J.G. Bartholomew


REFERENCE TO COLOURING.
Over 100 per square mile.
75 to 100 ,, ,,
50 to 75 ,, ,,
25 to 50 ,, ,,
12 to 25 ,, ,,
6 to 12 ,, ,,
Under 6 ,, ,,
CAPE COLONY
SHOWING THE DISTRIBUTION OF
GOATS
English Miles
0 10 20 30 40 50 100
Longitude East of Greenwich.
TRANSVAAL
ORANGE RIVER COLONY
BASUTO LAND
NATAL
British Bechuanaland
GERMAN SOUTH WEST AFRICA
GORDONIA
NAMAQUALAND
KENHART
PRIESKA
HAY
BARKLY WEST
KIMBERLEY
HERBERT
HOPETOWN
PHILIPSTOWN
BRITSTOWN
CARNARVON
COLESBERG
HERSCHEL
ALIWAL NORTH
ALIWAL SOUTH
BURGHERSDORP
STEYNSBURG
HANOVER
VICTORIA WEST
RICHMOND
MIDDELBURG
HOPEHOUSE
TARKA
GLEN GREY
ENGCOBO
TSOLO
LUSIKISIKI
LIBODE
UMTATA
NGQELENI
PORT ST. JOHNS
CALVINIA
VAN RHYNS DORP
FRASERBURG
CLANWILLIAM
C. Dascada
BEAUFORT WEST
SUTHERLAND
MURRAYSBURG
GRAAFF REINET
ABERDEEN
ADDO
SOMERSET EAST
CRADOCK
CATHCART
KOMGA
WILLOWVALE
KEI R.
EAST LONDON
CERES
PIQUETBERG
PRINCE ALBERT
WILLOWMORE
UNIONDALE
UITENHAGE
ALBANY
BATHURST
ALEXANDRIA
PORT ELIZABETH
SALT R.
PORT ALFRED
WORCESTER
ROBERTSON
LADISMITH
OUDTSHOORN
GEORGE
KNYSNA
MOSSEL BAY
CAPE TOWN
SWELLENDAM
RIVERSDALE
CALEDON
BREDASDORP
C. Agulhas
ATLANTIC OCEAN
INDIAN OCEAN
Port Nolloth
Hondeklip Bay
Port Natal
Mafeking
Lichtenburg
Johannesburg
Pretoria
Middelburg
Heidelberg
Potchefstroom
Vereeniging
Standerton
Vryburg
Taungs
Kuruman
Mafeking
Mochudi
Morokweng
Mokopon
Zeerust
Elands R.
Rustenburg
Krugersdorp
The Springs
Ermelo
Vaal R.
Harrismith
Bethlehem
Ladysmith
Newcastle
Utrecht
Dundee
Estcourt
Greytown
Pietermaritzburg
Richmond
Durban
Umsinto
Umzimkulu R.
Umtamvuna R.
Kokstad
Mount Currie
Mount Frere
Mount Ayliff
Matatiele
Barkly East
Barkly West
Hopetown
Griquatown
Campbell
Douglas
Prieska
Upington
Kenhart
Warmbad
Stolzenfels
Khais
Kuruman R.
Molopo R.
Vryburg
Taungs
Bloemhof
Boshof
Kimberley
Jacobsdal
Bloemfontein
Brandfort
Winburg
Boothstad
Kroonstad
Vredefort
Heilbron
Frankfort
Vaal R.
Harrismith
Ficksburg
Wepener
Jagers Fontein
Fauresmith
Bethanie
Riet R.
Modder R.
Orange R.
Caledon R.
Buffels R.
Springbok
Ookiep
Kamiesberg
Kenhart
Pella
Orange R.
Hondeklip Bay
Bowesdorp
Gentedal
Brandvlei
Karkop
Carnarvon
Britstown
Philipstown
Prieska
Hopetown
Douglas
Griquatown
Campbell
Ritchie
Barkly West
Warrenton
Taungs
Vryburg
Kuruman
Malopo R.
Khais
Stolzenfels
Warmbad
Upington
Orange R.
Hay
Kenhart
Prieska
Port Nolloth
Buffels R.
Ookiep
Springbok
Namaqualand
Hondeklip Bay
Bowesdorp
Gentedal
Brandvlei
Karkop
Carnarvon
Britstown
Philipstown



The Edinburgh Geographical Institute

J G Bartholomew


REFERENCE TO COLOURING.
Over 30 per square mile.
20 to 30 ,, ,,
15 to 20 ,, ,,
10 to 15 ,, ,,
5 to 10 ,, ,,
2 to 5 ,, ,,
Under 2 ,, ,,
CAPE COLONY
SHOWING THE DISTRIBUTION OF
HORNED CATTLE
English Miles
0 10 20 30 40 50 100
TRANSVAAL
ORANGE RIVER COLONY
NATAL
BASUTO LAND
GERMAN SOUTH WEST AFRICA
British Bechuanaland
VRYBURG
GORDONIA
KENHART
HAY
BARKLY WEST
KIMBERLEY
HERBERT
PRIESKA
HOPETOWN
PHILIPSTOWN
BRITSTOWN
CARNARVON
COLESBERG
HANOVER
VICTORIA WEST
RICHMOND
MIDDELBURG
GRAAFF REINET
MURRAYSBURG
ADDO
CRADOCK
SOMERSET EAST
ALBANY
BEDFORD
PEDDIE
BATHURST
ALEXANDRIA
UITENHAGE
UNIONDALE
WILLOWMORE
PRINCE ALBERT
BEAUFORT WEST
ABERDEEN
SUTHERLAND
CLANWILLIAM
CERES
PIQUETBERG
MALMESBURY
WORCESTER
LADISMITH
OUDTSHOORN
GEORGE
KNYSNA
HUMANSDORP
PORT ELIZABETH
ALICE
KOMGHA
KING WILLIAMS TOWN
EAST LONDON
QUEENSTOWN
CATHCART
STUTTERHEIM
WILLOWVALE
KENTAN
ELLIOTDALE
BIZANA
LUSIKISIKI
LIBODE
TSOLO
UMTATA
ENGCOBO
NGELENI
MOUNT AYLIFF
MOUNT FLETCHER
MATATIELE
UMZIMKULU
HERSCHEL
ALIWAL NORTH
BARKLY EAST
ROUXVILLE
SMITHFIELD
WEPENER
FERREIRA
BETHULIE
THABANCHU
BLOEMFONTEIN
BOSHOF
KROONSTAD
HEILBRON
VREDEFORT
VEREENIGING
JOHANNESBURG
KRUGERSDORP
RUSTENBURG
PRETORIA
LICHTENBURG
MAFEKING
MOSHETSI
MOKOPONG
ZEERUST
ELANDS R.
MIDDELBURG
LYDENBURG
STANDERTON
HEIDELBERG
POTCHEFSTROOM
HERMANSDORP
VRYBURG
TAUNGS
BLOEMHOF
HOOPSTAD
WARRENTON
DOUGLAS
CAMPBELL
GRIQUATOWN
JACOBSDAL
MODDER R.
RIET R.
ORANGE R.
VAAL R.
HARRISMITH
LADYSMITH
NEWCASTLE
UTRECHT
VRYHEID
DUNDEE
GREYTOWN
PIETERMARITZBURG
RICHMOND
UMZINTO
UMZIMKULU R.
UMTAMVUNA R.
PORT NATAL
PORT ST. JOHNS
INDIAN OCEAN
ATLANTIC OCEAN
Longitude East of Greenwich
The Edinburgh Geographical Institute
J.G. Bartholomew

The Edinburgh Geographical Institute

J. G. Bartholomew

APPENDIX.

(A).

STATEMENT SHOWING FOR EACH DIVISION OF THE COLONY THE AREA OF CROWN LANDS DISPOSED OF, THE TOTAL AMOUNT REALISED, AND THE AVERAGE PRICE PER MORGEN, IN THE YEAR 1901.

DIVISION.	Area disposed of.			Amount Realised.			Average Price per Morgen.		
	Morgen.	Rds.	Ft.	£	*s.*	*d.*	£	*s.*	*d.*
Albany	—	112	98	—			—		
Barkly West	3,783	331	108	336	10	0		1	9¼
Bathurst	1	272	127	80	0	0	55	0	11
Beaufort West... ...	189	246	—	24	0	0		2	6½
Caledon...	2,213	380	143	260	0	0		2	4
Cape	100	52	28	1,629	3	4	16	5	0
Ceres	10,859	422	—	471	0	0			10¼
Clanwilliam	604	399	—	20	0	0			8
East London	115	370	15	361	0	0	3	2	6
Fort Beaufort	58	323	113	350	0	0	5	19	6
Fraserburg	17	33	48	119	3	0	6	19	2
George	4	300	—	—			—		
Glen Grey	80	201	72	267	0	0	3	6	6
Gordonia	15,081	261	42	227	13	4			3½
Herbert	14	548	58	88	0	0	5	18	0
Humansdorp	3,193	376	—	796	13	4		5	0
Kimberley	38	193	10	275	0	0	7	3	6
King William's Town...	1,341	378	91	5,416	5	0	4	0	9
Komgha	1	392	32	29	5	0	17	11	0
Ladismith	1,187	192	—	41	0	0			8¼
Mafeking	5	19	96	—			—		
Malmesbury	338	583	142	91	0	0		5	4¼
Mossel Bay	1	446	26	—			—		
Peddie	34	424	138	143	15	0	4	2	11
Piquetberg	1,118	200	—	555	0	0		10	0
Port Elizabeth ...	—	36	139	21,250	0	0	344,918	5	6
Prieska	2	280	80	165	8	0	67	1	8
Queen's Town	287	190	33	499	0	0	1	14	6
Riversdale	—	349	42	35	0	0	60	0	0
Somerset East... ...	202	66	—	—			—		
Stellenbosch	218	103	128	6,524	16	8	30	0	0
Stutterheim	5	—	—	2	10	0		10	0
Sutherland	16,427	18	—	1,420	0	0		1	8¾
Swellendam	771	264	—	210	0	0		5	5¼
Tulbagh	—	225	—	—			—		
Uitenhage	3,030	506	130	390	0	0		2	6¾
Victoria East	919	537	69	2,702	10	0	2	18	9
Vryburg	3,812	39	77	1,226	12	4		6	5
Willowmore	80	140	—	4	0	0		1	0
Griqualand East ...	6,992	595	141	9,417	1	8	1	6	11
Tembuland	16	427	132	518	7	6	31	1	10
Transkei	253	560	77	2,446	15	0	9	12	7¾
Total ...	73,407	404	131	58,393	9	2		15	10¾

NOTE.—One Morgen=2·1165402 Acres.

(B).

RETURN OF ALL CROWN LAND IN THE COLONY, SHOWING TOTAL EXTENTS OF SURVEYED AND UNSURVEYED LAND.

Division.	Surveyed Extent.			Unsurveyed Extent (approximate).
	Morgen.	Sq. rds.	Sq. ft.	Morgen.
Aberdeen	412	170	—	—
Albany	2,610	322	—	—
Albert	227	480	—	—
Alexandria	863	39	—	—
Barkly East	554	561	—	—
Barkly West	69,437	318	—	—
Bathurst	1,436	519	94	2,720
Beaufort West	329	55	—	—
Bredasdorp	91	359	—	800
Caledon	19,347	504	—	13,560
Calvinia	486,876	72	83	147,700
Carnarvon	8,226	150	—	—
Cathcart	—	—	—	500
Ceres	24,040	206	—	—
Clanwilliam	79,877	572	—	99,000
Cradock	1,417	258	—	—
Fraserburg	323	140	—	—
George	9,027	210	—	—
Gordonia	—	—	—	3,412,728
Graaff Reinet	2,087	554	—	—
Hay	66,351	588	—	—
Herbert	3,493	177	—	—
Hope Town	4,716	573	—	—
Humansdorp	34,846	293	—	104,770
Jansenville	—	—	—	1,000
Kenhardt	1,045,629	258	—	479,000
Knysna	34,201	88	—	29,000
Ladismith	35,764	393	—	—
Malmesbury	612	287	—	1,800
Middelburg	1,291	431	—	—
Mossel Bay	4,634	580	—	—
Murraysburg	944	279	—	2,380
Namaqualand	971,643	49	—	2,244,000
Oudtshoorn	40,047	281	—	—
Paarl	468	463	—	52,900
Prieska	19,372	542	—	—
Prince Albert	84,154	299	—	18,120
Queenstown	6,677	167	—	—
Richmond	731	356	—	—
Riversdale	17,439	129	—	—
Robertson	6,413	137	—	14,230
Stellenbosch	1,606	329	—	9,000
Steynsburg	981	61	—	—
Sutherland	—	—	—	8,000
Swellendam	120	82	—	17,900
Tarka	270	547	—	—
Tulbagh	4,886	249	—	18,500
Uitenhage	51,535	203	—	43,400
Uniondale	79,745	94	—	16,500
Van Rhynsdorp	265,289	390	—	—
Victoria West	155	75	—	—
Vryburg	110,754	218	—	726,666
Willowmore	3,037	490	—	—
Worcester	20,566	53	—	14,000
Total	3,625,572	251	33	7,478,174

(C).

RETURN giving particulars of Land in the various divisions of the Cape Colony; furnished by representative farmers and others in each district.

Note.—The details furnished, especially the land values, must be taken as referring to the district in which the farmer resides, and *not to his own property*.

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
ABERDEEN										
Komskloof ...	Friable	Wheat	May	Nov.	Cattle, 50 cart loads	15 muids	Wheat and maize	5 to 6		
		Maize	Nov.	May		7½ ,,		5 to 6		
		Lucerne	April	Oct. to May		1,000 bundles		Monthly		
		Oat-hay	,,	Oct.		15 muids		,,		
		Barley	May	,,		15 ,,		,,		
Aberdeen ...	Stiff and friable	Wheat	May	Nov.	Kraal, 50 cart loads		Wheat,	3		
		Maize	Nov.	May			oat-hay,	3		
		Lucerne	April	Oct. to May			barley,	10		
		Oat-hay	,,	Oct.			and	3		
		Barley	May	,,			maize	3		
		Tobacco	April	Feb.			—	5		
ALBANY										
Harvest Vale (Salem) ...	Stiff and friable	Wheat	June, July	Dec.		3 to 7 muids	Oat-hay,		Over £30	7*s.* 6*d.* to 20*s.*
		Maize	Sep. to Nov.	Feb., March		3 to 7 ,,	Kaffir corn, barley, and maize	Fortnightly		
		Lucerne	July	Oct. to Mar.						
		Root	March	As required						
		Oat-hay	June, July	Nov.		500 bundles				
		Barley	April, May	Oct. to Dec.		3 to 7 muids				

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
ALBANY—*Cont.*										
Highlands ...	Friable	Wheat	April	Nov.	Kraal, 1½ tons	15 muids	Potatoes			
		Maize	Sept.	March	,, 2½ ,,	12 ,,				
		Lucerne	March	April						
		Root	Feb.	,,	,, 3½ ,,	100 ,,				
		Oat-hay	April	Oct.	,, 1 ,,	10 ,,				
		Barley	,,	Nov.	,, 1½ ,,	25 ,,				
		Tobacco	May	Feb.	,, 2 ,,					
Hilton	Stiff	Wheat	June	Jan.	20 cart loads	16 muids	Potatoes	3	About £8	About £4
		Millets	Oct.	March	40 ,, ,,	25 ,,		3		
		Maize	,,	,,	40 ,, ,,	20 ,,		3		
		Lucerne	March	Oct.	60 ,, ,,	—		Monthly		
		Root	Aug.	Dec.	60 ,, ,,	240 ,,		3		
		Oat-hay	April	Nov.	20 ,, ,,	20 ,,		3		
		Barley	June	,,	20 ,, ,,	20 ,,		3		
		Tobacco	April	Dec.	60 ,, ,,	—		Monthly	£3 to £310*s.*	About £1 10*s.*
Thornlands ...	Stiff and friable	Wheat	June	Nov.	Kraal, 8 tons	3 muids	Oat-hay, maize, tobacco, and potatoes	3		
		Millets	Sept.	Feb.	,, 6 ,,	5 ,,		2		
		Maize	Oct.	March	,, 6 ,,	4 ,,		3		
		Lucerne	April	—	,, 8 ,,	—		8		
		Root	Sept.	Feb.	,, 8 ,,	15 ,,		2		
		Oat-hay	June	Nov.	,, 0 ,,	4 ,,		4		
		Barley	May	,,	,, 3 ,,	5 ,,		3		

ALBERT										
Hebron	Stiff and friable	Wheat	April	Dec.	Dung	5 muids	Wheat	2	10*s.*	7*s.*
		Millets	Sept.	Jan.	,,	–	and	2		
		Maize	Oct.	,,	,,	4 ,,	oat-hay	1		
		Lucerne	Sept.	,,	,,	—		1		
		Root	,,	,,	,,	—		2		
		Oat-hay	April	Nov.	,,	—		2		
		Barley	,,	,,	,,	4 ,,		2		
		Tobacco	,,	—	,	—		3		
Altyre	Every variety	Wheat	April to June	Dec.	Kraal 10 carts	10 to 20 muids	Lucerne	4 to 6	£15	£1 10*s.*
		Millets	Sept.	When ripe	, 10 ,,	50 ,, 100 ,,		2 ,, 3		
		Maize	Oct.	Jan. to June	, 10 ,,	50 ,, 100 ,,		2 ,, 3		
		Lucerne	March	When fit	, 10 ,,	—		2 ,, 6		
		Root	Jan.	May to Sept.	, 10 ,,	10 tons		1 ,, 3		
		Oat-hay	April to June	Dec.	,, 10 ,,	2,000 bundles		2 ,, 3		
		Barley	,, ,,	,,	10 ,,	25 to 50 muids		2 ,, 3		
Roodebergevlei ...	Every variety	Wheat	May	Dec.	Kraal 10 tons	20 bushels	Barley	3	£2 10*s.*	£1 5*s.*
		Maize	Oct.	March	10 ,,	16 ,,		2		
		Oat-hay	June	Dec.	10 ,,	1,600 sheaves		3		
		Barley	April	Nov.	—	18 bushels		2		
Rietfontein ...	Friable	Wheat	April	Dec.	Kraal, 25 carts	15 muids	Pota-	3 to 4		
		Maize	Nov.	May	,, 25 ,,	40 ,,	toes,	1		
		Lucerne	Feb.	—	,, 25 ,,		oats,			
		Root	,,	—	,, 25 ,,		and			
		Oat-hay	May	Nov.	,, 25 ,,	—	wheat.	2 to 3		
		Barley	April	,,	,, 25 ,,	20 ,,	—	2		
ALEXANDRIA										
Whitney... ...	Mostly friable	Wheat	June	Dec.	Kraal, 4 tons	8 muids	Oat-hay	—	—	12*s.*6*d.*
		Maize	Nov.	March	,, 4 ,,	10 ,,	and			to
		Lucerne	Aug.	Oct.	,, 4 ,,		maize.			20*s.*
		Root	March	,,	,, 4 ,,					

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
ALEXANDRIA—*Cont.*										
Whitney... ...	Mostly friable	Oat-hay	April	Oct., Nov.	Kraal, 4 tons	5 muids	Oat-hay and maize.	—	—	12*s.*6*d.* to 20*s.*
		Barley	,,	,, ,,	,, 4 ,,	5 ,,				
		Tobacco	June	Dec.	,, 4 ,,					
De Hoep ...	Friable	Wheat	July	Dec.	Dung, 4 waggons	5 muids				
		Maize	Nov.	Feb.	,, 4 ,,	6 ,,				
		Root	April	Dec.	,, 4 ,,	3,000 lbs.				
		Oat-hay	May	Oct.	,, 4 ,,	450 bundles				
		Barley	,,	,,	,, 4 ,,	15 muids				
		Tobacco	March	Jan.	,, 5 ,,					
Longflats ...	Friable	Wheat	June	Dec.	—	40 bushels	Wheat.	—	—	About £1 10*s.*
		Maize	Sept.	Feb.	—	100 fold				
		Lucerne	June							
		Root	Aug.	Jan.						
		Oat-hay	May	Oct.	—	1,500 bundles per sack				
		Barley	,,	,,	—	60 bushels				
		Tobacco	May, June	Jan. to April						
Waai Heuvel ... Ward 2	Friable	Wheat	July	Dec.	Kraal, 2 loads	2 bags	Oat-hay.	—	—	£2
		Millets	Sept.	March	,, 2 ,,	4 ,,				
		Maize	Oct.	April	,, 2 ,,	4 ,,				
		Lucerne	July	Jan.	,, 2 ,,					

		Root	,,	Sept.	,, 2 ,,	2 loads				
		Oat-hay	June	Nov.	,, 2 ,,	200 bundles				
		Barley	,,	,,	,, 2 ,,	3 bags				
		Tobacco	April	Dec.	,, 2 ,,					
ALIWAL NORTH										
Rietfontein ...	Sandy	Wheat	April	Nov., Dec.	Nil	3 fold	Oat-hay and maize	Depends on rainfall	About £1	About £1
		Millets	July to Sept.	April	,,	3 ,,				
		Maize	Sept., Oct.	Feb. to April	,,	40 ,,				
		Root	Oct. and Feb.	—	,,					
		Oat-hay	Apl., Jun., Jul.	Oct., Nov.	,,	1,200 bundles per bag				
		Barley	April and Jan.	Nov.	,,	35 fold				
		Tobacco	April	—	,,					
Hoogwaterval ...	Stiff and friable	Wheat	April	Dec.	Nil	10 muids	Wheat and oats	1	About £1	About 15*s.*
		Millets	Aug.	Jan.	,,	9 ,,		1		
		Maize	Nov.	April	,,	7½ ,,		1		
		Lucerne	Sept.	Jan.	,,	—		2		
		Root	Feb.	—	,,	—		2		
		Oat-hay	April	Oct.	,,	15 ,,		2		
		Barley	,,	Nov.	,,	15 ,,		2		
		Tobacco	July	Jan.	,,	—		3		
Aliwal North ...	Mostly friable.	Wheat	April	Dec.		20 ,,	Oat-hay.	3	Over £1 10*s.*	About 15*s.*
		Maize	Nov.	May		12½ ,,		3		
		Lucerne	Spring	As required		—		Constantly.		
		Root	Feb.	June		—		2		
		Oat-hay	April	Oct.		15 ,,		4 to 5		
		Barley	,,	,,		15 ,,		4 ,, 5		
		Tobacco	July	Jan.		—		2		
Strydfontein ...	Stiff	Wheat	April	Dec.	Kraal	20 bags	Oat-hay and potatoes	3	Over £5	Up to £1 5*s.*
		Maize	Nov.	May	,,	12½ ,,		3		
		Root	,,	June, July	,,	—		2		
		Oat-hay	May	Nov.	,,	750 bundles		5		
		Barley	,,	,,	,,	750 ,,		5		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
ALIWAL NORTH —*Cont.*										
Jamestown ...	Friable	Wheat	April, May	Dec. to Feb.	Kraal	25 to 30 muids	Oat-hay, wheat, potatoes, barley, and maize	3	£1 10*s.* to £2	10*s.* to 12*s.*6*d.*
		Millets	Aug.	,, ,,	—	7 ,, 8 ,,		3		
		Maize	Oct. to Dec.	April, May	—	20 ,, 30 ,,		2		
		Lucerne	—	—	—	—		4		
		Root	Oct. to Dec.	April, May	—	12 to 20 fold		1		
		Oat-hay	July, Aug.	Dec., Jan.	—	10 ,, 20 ,,		5		
		Barley	,, ,,	,, ,,	—	20 ,, 30 ,,		3		
		Tobacco	April	Dec. to April	Kraal	—		6		
BARKLY EAST										
Barkly East ...	Mostly friable	Wheat	July	Jan.	Nil	8 muids (?)	Potatoes and oat-hay	3	About £6	About £3 5*s.*
		Maize	Oct.	April	,,	9½ ,,		4		
		Lucerne	Sept.	Dec.	,,					
		Root	Jan.	May	,,	25 ,,				
		Oat-hay	Aug.	Dec.	,,	12 ,,		4		
		Barley	,,	Jan.	,,	12 ,,		3		
Barkly East ...	Friable and stiff	Wheat	July, Aug.	Jan.	Kraal	7½ bags	Root and cereals	3 to 6 Fortnightly	£3 to £5	£2 to £6
		Maize	Oct.	—	—	—				
		Root	Nov.	May, June	—	10 to 15 bags				
		Oat-hay	Oct.	Dec., Jan.	Kraal	7½ ,,		3 to 6		
		Barley	,,	,, ,,	,,	15 ,,		2 ,, 3		
Barkly East ...	Friable	Wheat	July, Aug.	Jan.	Nil	6 bags	Potatoes	3	£15	£5

		Millets	Oct.	—	,,	—	and	3		
		Root	Jan.	Dec.	,,	25 ,,	oat-hay			
		Oat-hay	Sept.	—	,,	5 ,,		5		
		Barley	,,	Jan.	,,	15 ,,		3		
Barkly East ...	Stiff	Wheat	Aug.	Jan.	—	40 fold	Oat-hay	3 to 4		
		Maize	Oct.	April	—	40 ,,		3 ,, 4		
		Root	Dec.	May, July	—	—		None		
		Oat-hay	Aug.	Jan.	—	1,500 ,,		3 to 4		
		Barley	,,	,,	—	30 ,,		3 ,, 4		
Barkly East ...	Friable	Wheat	July	Jan.	Nil	8 bags	Potatoes	1	£3	£2 10*s.*
		Maize	Sept.	May	,,	8 ,,		None		
		Lucerne	,,	Dec.	,,	—		,,		
		Root	Jan.	May	,,	20 tons		,,		
		Oat-hay	Sept.	Jan.	,,	8 bags		3		
		Barley	,,	,,	,,	8 ,,		1		
Groot Vlei ...	Mostly friable	Wheat	July	Jan.	Nil	10 muids	Potatoes	2	£5 to £6 5*s.*	£3 15*s.*
		Maize	Oct.	June	,,	10 ,,		2		
		Root	Nov., Jan.	April, May	,,	30 ,,		2		
		Oat-hay	Aug.	June	,,	7½ ,,		2		
		Barley	,,	,,	,,	15 ,,		2		
BARKLY WEST										
Rutland	Mostly friable	Wheat	May	Oct.	Kraal	8 muids	Oat-hay	5 to 6	About £20	About 20*s.*
		Millets	Nov.	May	—	—		5 ,, 6		
		Maize	,,	,,	—	—		None		
		Oat-hay	May	Oct.	—	—		,,		
		Barley	,,	,,	—	—		,,		
Barkly West ...	Mostly friable	Wheat	May	Oct.	Kraal	7½ muids	Oat-hay	5 to 6	£15	10*s.*
		Millets	Oct.	June	,,	6 ,,		None		
		Maize	Nov.	May	,,	—		,,		
		Oat-hay	May	Oct.	,,	—		6, 7		
		Barley	,,	,,	,,	—		6, 7		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

Division and Name of Farm.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
BARKLY WEST —*Cont.*										
Daniel's Kuil ...	Mostly friable	Wheat	July	Dec.	Kraal, 20 tons	7½ muids	Oats and maize	7	£50	
		Millets	Oct.	June	,, 20 ,,			10		
		Maize	Nov.	May	,, 20 ,,			7		
		Root	Sept. to Jan.	,,	,, 20 ,,			10 to 12		
		Oat-hay	July	Nov.	,, 20 ,,			7		
		Barley	,,	,,	,, 20 ,,			7		
The Bend ...	Friable	Wheat	June	Dec.	Kraal, 1 to 2 tons		Oat-hay and maize	—	10*s.* to 25*s.*	2*s.* 6*d.* to 10*s.*
		Maize	Aug. & Dec.	Dec. & May	,, 1 ,, 2 ,,					
		Oat-hay	May	Nov., Oct.	,, 1 ,, 2 ,,					
		Barley	June	Nov.	,, 1 ,, 2 ,,					
		Tobacco	Aug.	Jan. & May	,, 1 ,, 2 ,,					
Newlands ...	Friable	Wheat	June	Dec.	—	18 bushels		5	10*s.*	
		Maize	Nov.	April, May	—	—		Several		
		Root	Sept. to Jan.	Dec., May	Kraal, 20 tons	200 bushels		Periodical		
		Oat-hay	June	Nov.	—	1,000 sheaves				
—— ...	Friable	Wheat	May	Oct.	Kraal, 100 carts	30 muids	Maize and oat-hay	6	About £50	
		Millet	Nov.	April		40 ,,		3		
		Maize	,,	,,		80 ,,		4		
		Root	Jan.	—		300 ,,		6		
		Oat-hay	May	Oct.		1,000 bundles		5		
		Barley	,,	,,		25 muids		5		
		Tobacco	Aug.	Jan.						

BATHURST									
Clay Pits ...	Stiff and friable	Maize	Sept.		Kraal		Maize and potatoes	None	£100	
		Millets	,,		,,			,,		
		Root	April, May		,,			8		
		Oat-hay	July		,,					
		Tobacco	Sept.		,,			8		
Barville Park ...	Friable	Wheat	May	Nov.		10 bags	Oat-hay	—	—	5*s.*
		Millets	Sept.	March						
		Maize	Nov.	May, June		30 ,,				
		Root	Feb. & Aug.	May & Nov		200 ,,				
		Oat-hay	May	—		15 ,,				
		Barley	April	—		30 ,,				
Elephant's Park	Mostly stiff	Wheat	June, July	Nov.	Kraal, 4 waggons	7 muids	Maize and potatoes	—	—	£2
		Millets	Aug.	March	,, 4	30 ,,				
		Maize	July	,,	,, 4	20 ,,				
		Root	Aug.	Dec.	,, 4	50 ,,				
		Oat-hay	June	Nov.	,, 4	4,500 lbs.				
		Barley	May	Oct.	,, 4	20 muids				
Cuylerville (?) ...	Sandy	Wheat	Feb.	Nov.	—	7½ muids	Maize and oat-hay	—	—	£2 to £3
		Maize	Sept.	March	—	8 ,,				
		Root	July	—	Kraal & stable	20 fold				
		Oat-hay	April	—	—	500 bundles				
		Barley	July	—	—	10 muids				
BEAUFORT WEST										
Bakensrug ...	Stiff and friable	Wheat	May	Nov.	Kraal	15 muids	Wheat	6 to 8		
		Millets	,,	,,	,,	7½ ,,		6 ,, 8		
		Maize	Oct.	April	,,	10 ,,		6 ,, 8		
		Lucerne	Sept.	—	,,	—		6 ,, 8		
		Root	Aug.	June	Stable	—		6 ,, 8		
		Oat-hay	May	Nov.	Kraal	400 bundles		6 ,, 8		
		Barley	,,	,,	,,	25 muids				

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
BEAUFORT WEST—*Cont.*										
Nelspoort ...	Stiff	Wheat	May, June	Dec.	Sheep	30 bushels	Wheat,	3 to 5		
		Maize	Oct., Nov.	April	,,		maize	7 ,, 10		
		Lucerne	,, to Mar.	—	,,		and			
		Oat-hay	April	Aug., Sept.	,,		lucerne	2 to 4		
Slangfontein ...	Friable	Wheat	May	Dec.	Sheep, 50 carts	15 muids	Pota-	6	£60 to	3*s.* 9*d.*
		Millets	,,	—	,, 50 ,,		toes,	6	£75	to 5*s.*
		Maize	Oct.	March	,, 50 ,,	15 muids	wheat,	Weekly		
		Lucerne	July	—	,, 50 ,,	1,000 bundles	and	,,		
		Root	Oct. to Dec.	—	Stable, 50 ,,	100 muids	barley	,,		
		Oat-hay	July	—	Sheep, 50 ,,	3,000 lbs.		6		
		Barley	May	Dec.	—	40 muids		6		
Hans River ...	Stiff and friable	Wheat	April	Nov.	Sheep, 500 bags	7½ muids	Potatoes	4	About	
		Maize	Oct.	Jan.	,, 500 ,,			4	£5 to	
		Lucerne	Sept.	—	,, 500 ,,			5	£10	
		Oat-hay	April	Oct.	,, 500 ,,	350 sheaves		4		
		Barley	May	—	,, 500 ,,	10 muids		4		
		Tobacco	,,	—	,, 500 ,,			4		
Salt River ...	Mostly	Wheat	May	Dec.	Nil	11¼ muids	Wheat	4 to 6		
P.O. Nelspoort	friable	Maize	Nov.	April	,,	10 ,,	and	5 ,, 6		
		Lucerne	Sept. to Feb.	—	,,		lucerne	Fortnightly		

		Oat-hay	April	Oct.	,,	1,000 bundles		4		
		Barley	May	Nov.	,,	15 muids		5		
BEDFORD										
Bedford	Mostly friable	Wheat	May	Dec.			Maize and lucerne	3	About £1 to £2	
		Maize	Nov.	May						
		Lucerne	March	Dec.				5		
		Root	Sept.							
		Oat-hay	April	Nov.				2		
		Barley	Aug.	Dec.				2		
Melrose ... ... (Baviaan's Drift)	Mostly friable	Wheat	May	Dec.	Kraal	6 bags	Lucerne	2	£35 to £100	£1 to £2
		Lucerne	March	,,	,,	3 to 4 tons		3		
		Root	Sept.	—	,,			5		
		Oat-hay	April	Nov.	,,			2		
		Barley	Aug.	—	,,			2		
BREDASDORP										
Ratel River ...	Friable	Wheat	May	Nov.	Kraal, and	15 to 20 fold	Barley and wheat	Monthly	—	10*s.* to 20*s.*
		Oats	,.	Oct.	superphosphates	25 ,, 30 ,,		,,		
		Barley	,,	,,	,,	25 ,, 30 ,,		,,		
		Tobacco	,,	—	,,	—		,,		
Zoetendals Vallei	Friable	Wheat	May	Nov.	½ ton farmyard or 100 lbs. fertiliser	12½ muids	Wheat and barley	None	£5	£1 10*s.*
		Root	,,	,,		—		,,		
		Oat-hay	April	Oct.		17½ muids		,,		
		Barley	May	Nov.		25 ,,		,,		
BRITSTOWN										
Doorsekuilen ...	Mostly friable	Wheat	June	Dec.		10 muids	Wheat	3 to 4	£20	£8 to £10
		Maize	Oct.	March		—		5		
		Lucerne	Sept.	Oct. to April		4 cuttings		Monthly		
		Oat-hay	April	Oct.		10 muids		3 to 4		
		Barley	,,	,,		15 ,,		3 ,, 4		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crop.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
BRITSTOWN—*Cont.*										
Jackhalskuilen ...	Friable	Wheat	May	Nov., Dec.	Sheep, 8 or 9 carts	15 bags	Lucerne	4	£25	£10
		Maize	Oct.	Mar., April	,, 8 ,, 9 ,,	17½ ,,	and	6		
		Lucerne	Sept.	—	,, 8 ,, 9 ,,	—	oat-hay	Often		
		Root	Aug.	Jan.	,, 8 ,, 9 ,,	—		Weekly		
		Oat-hay	May	Oct.	,, 8 ,, 9 ,,	15 muids		5		
		Barley	,,	,,	,, 8 ,, 9 ,,	10 ,,		5		
P.O. Lemoenskloof	Friable	Wheat	May	Nov.	Sheep, 17 carts	15 muids	Oat-hay	5	£25	
		Maize	Oct.	Mar., April	,, 17 ,,	17½ ,,		7		
		Lucerne	Sept.	—	,, 17 ,,	—		Often		
		Root	Aug.	Jan.	,, 17 ,,	—		Weekly		
		Oat-hay	May	Oct.	,, 17 ,,	15 ,,		6		
		Barley	,,	,,	,, 17 ,,	17½ ,,		6		
CALEDON										
Caledon	Variable	Wheat	May, June	Dec.	Superph., 200lbs.	12½ muids	Wheat,	None	£2 10*s.*	10*s.* to
		Millets	March	Feb.	Ordinary	20 ,,	barley,	Weekly	to £5	30*s.*
		Maize	Sept.	,,	—	10 ,,	oat-hay,	,,		
		Lucerne	Aug.	—	—	—	onions,	,,		
		Root	May	—	—	—	and	,,		
		Oat-hay	April, May	Oct.	Superph., 200lbs.	22½ ,,	potatoes	None		
		Barley	May, June	Nov.	,, 200 ,,	20 ,,		,,		
		Tobacco	April	Oct.	Sheep manure	—		,,		
Klipdrift ...	Friable	Wheat	May	Dec.	Guano, 1 bag	10 ,,	Wheat	—	£37 10*s.*	£2

		Maize	Sept.	March	,, 1½ ,,	25 ,,				
		Oat-hay	May	Nov.	,, ¾ ,,	18 ,,				
		Barley	,,	,,	,, 1 ,,	17½ ,,				
Weltevreden ...	Stiff and friable	Wheat	June	Dec.	Superphosphate	—	Wheat and barley			
		Maize	Oct.	Jan.						
		Lucerne	June	Dec.						
		Oat-hay	April	Nov.						
		Barley	July	Dec.						
		Tobacco	Oct.	March	—	100lbs.				
Radgee	Variable	Wheat	June	Oct.	Guano, 1 to 1½ bags	12½ muids	Wheat and barley	2 to 4	£3 15*s.*	£1 10*s.* to £2
		Maize	Sept.	Feb.	Guano, 1 bag	10 ,,		2 ,, 4		
		Lucerne	Aug.	—	—	—		2 ,, 4		
		Root	May	—	—	—		2 ,, 4		
		Oat-hay	April	Oct.	Guano, ¾ bag	20 ,,				
		Barley	June	,,	,, ¾ ,,	22½ ,,				
		Tobacco	May	—	—	—		4 ,, 6		
Good Hope ...	Mostly stiff	Wheat	May	Dec.	Superph., 200lbs.	12½ muids	Maize	None	About £5 to £15	About 32*s.*6*d*
		Millets	Oct.	Jan., Feb.	Ordinary manure	—		,,		
		Maize	Aug.	,, ,,	Any ,,	—		Weekly		
		Lucerne	April	—	—	—		None		
		Root	Aug.	Nov., Dec.	Ordinary ,,	10 fold		Bi-weekly		
		Oat-hay	April	Sept., Oct.	Superph., 200lbs.	10 muids		None		
		Barley	May	Oct., Nov.	,, 200 ,,	19 ,,		,,		
		Tobacco	April	Sept.	Sheep manure	—		,,		
Middelplaats ...	Mostly friable	Wheat	June	Dec.	Superph., 200lbs.	10 muids	Wheat and oat-hay	—	£12 10*s.*	£2 10*s.*
		Millets	March	Sept.	,, 200 ,,	20 ,,				
		Maize	Sept.	Feb.	Guano, ¼ ton	—		10		
		Oat-hay	April	Oct.	Superph., 200lbs.	22½ ,,				
		Barley	June	Nov.	,, 200 ,,	20 ,,				
		Tobacco	April	Jan.	Sheep					

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crop.	Irrigation wettings, per season	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
CALEDON—*Cont.*										
Dunghaye Park	Variable	Wheat	May	Cereals about 6 months after sowing	Superph., 70 to 125lbs.	12 to 14 bushels	Potatoes and onions	None	£5 to £10	£1 to £3
		Maize	Sept.		Superphosphate	—		10 to 20 Fortnightly		
		Lucerne	April, May		Basic Slag and Kraal, 300lbs.	—				
		Root	Aug.		Farmyard, 5 to 10 tons	—		Weekly		
		Oat-hay	April		Superph., 35 to 50lbs.	35 to 40 bushels		None		
		Barley	May, June		Superph., 65 to 100lbs.	39 ,, 45 ,,		,,		
CALVINIA										
Boschkloof ...	Variable	Wheat	May	Nov.	Sheep, 1 bag	40 fold	Wheat, oat-hay, and potatoes	3		
		Maize	Oct.	Jan.	All kinds, 1 bag	40 ,,		20		
		Lucerne	,,	—	,, ,, 1 ,,	—		3		
		Root	Sept.	Dec.	,, ,, 3 ,,	—		10		
		Oat-hay	May	Oct.	Sheep, 1 ,,	40 ,,		3		
		Barley	,,	,,	,, 1 ,,	—		3		
Matjesfontein ...	Stiff	Wheat	May	Dec., Jan.	—	20 muids	Maize	1 to 3	10*s.* to £2 10*s.*	
		Root	Oct.	April	Horse	15 ,,		Weekly		
		Oat-hay	July	Dec.	—	25 ,,		1 to 3		
		Barley	,,	,,	—	30 ,,		1 ,, 3		

CAPE										
De Hoep... ...	Stiff	Wheat	May	Nov.	Farmyard and guano	15 bushels	Wheat	—	—	About £1 10s.
		Lucerne	Aug.	Dec.						
		Oat-hay	May	Oct.	—	37½ ,,				
		Barley	,,	,,	Farmyard and guano	45 ,,				
Oatlands... ...	Stiff	Wheat	May	Nov.	Farm, 2 tons	12 bushels	Oat-hay	—	—	£2 to £4
		Maize	Oct.	—	,,					
		Lucerne	May							
		Root	Aug.	—	,,					
		Oat-hay	May	Oct.						
		Barley	,,	Nov.	,, 3½ tons	35 bushels				
Altydgedacht ...	Friable	Wheat	May, June	Nov.	Superph. and guano, 200lbs.	30 fold	Oat-hay	None	About £15	About £5
		Maize	Sept.	Feb.	Farmyard	—		1, 2		
		Root	,,	Feb., March	,,	—		1, 2		
		Oat-hay	May	Oct.	Same as wheat					
		Barley	May, June	Nov.	Farmyard	100 fold				
Palen en Riet Vlei	Stiff, friable, and mixed	Wheat	May	Nov.	Farmyard and guano	25 ,,	Oat-hay	—	—	£2 10s. to £3
		Oat-hay	,,	Oct.						
		Barley	,,	,,		100 ,,				
CARNARVON										
Van Wyk's Vlei...	Stiff	Wheat	April, May	Nov.	Nil	4½ muids	Wheat	3	£4	
Carnarvon ...	Friable	Wheat	May	Dec.	Sheep	12½ muids	Wheat, potatoes, and lucerne	4, 5	£5	£2 10s.
		Maize	Nov.	March	,,	7½ ,,		6, 7		
		Lucerne	Aug.	Oct. to April	,,	—		Continually		
		Root	July	Oct., Nov.	,,	—		,,		
		Oat-hay	May	Nov.	,,	15 ,,		6 to 7		
		Barley	April	,,	,,	20 ,,		6 ,, 7		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony— *Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crop.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
CATHCART										
Sledmere ...	Stiff and friable	Wheat	April	Dec.	Farmyard	10 bags	Oat-hay and potatoes	2	£5	£2 10*s.*
		Maize	Nov.	May, June				1		
		Lucerne	Aug.							
		Root	Feb.	—				3		
		Oat-hay	May	Nov.				2		
		Barley	June	Dec.				1		
		Tobacco	Nov.	Feb.						
Happy Valley ...	Stiff and friable	Wheat	April, May	When ripe		10 bushels	Potatoes			
		Maize	Oct.	,, ,,						
		Lucerne	Feb.	,, ,,						
		Root	,,	,, ,,						
		Oat-hay	April, May	,, ,,		500 bundles				
		Barley	July	,, ,,		20 bags				
Ailsa	Friable	Wheat	May	Dec.	Farmyard	10 muids	Oat-hay	2	£2	£1
		Maize	Oct.	April		20 ,,		2		
		Root	Sept.	,,		100 ,,		1		
		Oat-hay	April	—		35 ,,		2		
		Barley	June	Jan.		45 ,,		2		
Retreat	Mostly stiff	Wheat	May, June	Dec.	Kraal	10 bushels	Potatoes	3		£2 10*s.*
		Millets	Oct.	—		—		2		
		Maize	,,	Feb.		20 ,,		2		
		Lucerne	March	—		—		3		

		Oat-hay	April	Nov.		800 bundles		2		
		Barley	,,	Dec.		15 bushels		3		
		Tobacco	Aug.	—		—		3		
Dynamite ...	Friable	Wheat	March to Sept.	When ripe	Kraal manure is used for potatoes and pumpkins	40 bushels	Potatoes			
		Maize	Oct., Nov.	,, ,,						
		Root	Sept. to Feb.	,, ,,						
		Oat-hay	March to Sept.	,, ,,						
		Barley	,, ,, ,,	,, ,,						
Mountain Top ...	Friable	Wheat	April	Dec.	—	3 bags	Potatoes and oat-hay	—	£6 to £12	£6 to £10
		Maize	Oct.	April	Kraal	2½ ,,				
		Potatoes	,,	May	,,	60 ,,				
		Oat-hay	April	Dec.	—	5 ,,				
		Barley	June	,,	,,	5 ,,				
Henderson (?) ...	Mostly friable, some stiff black	Wheat	April	Jan.	Kraal	10 muids	Potatoes, colonial oats and maize	3	—	10s.
		Maize	Nov.	June	,,	5 ,,		1		
		Lucerne	Sept.	—				Several		
		Root	July	—				,,		
		Oat-hay	April	Oct.				3 to 4		
		Barley	,,	—				1 ,, 3		
		Tobacco	May							
Hopewell ...	Friable, sandy	Wheat	April	Depends on season and dates of sowing.	Farmyard	30 fold (?)	Potatoes	—	—	£5
		Maize	Sept.		,,	50 ,,				
		Root	Feb.		,,					
		Oat-hay	April	Dates from	,,	2,000 bundles				
		Barley	,,	Dec. to Mar.	,,	50 fold				
Upper Chilton ...	Mostly sandy	Wheat	May	Jan., Feb.	Kraal	15 bags	Oat-hay and potatoes	3 to 4		
		Maize	Sept.	April	,,	15 ,,				
		Root	Sept. to Nov.	May	,,	2 tons				
		Oat-hay	May	Jan.	,,	4,000 bags				
		Barley	,,	Dec.	,,	15 ,,				

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
CATHCART—*Cont.*										
Dunskiel (?) ...	Mostly friable.	Wheat	April	15th Jan.	Kraal and artificial fertiliser	1½ muids	Potatoes and lucerne	—	—	£3
		Lucerne	Feb.	—						
		Root	,,	—						
		Oat-hay	March	—		7½ ,,				
		Barley	April	—		10 ,,				
Fairford	Friable and stiff	Wheat	April, May	Dec., Jan.	Chiefly kraal, also some artificial fertiliser	20 bushels	Potatoes and oat-hay	1 to 5 According to rainfall	£10	£5
		Maize	Sept.	May		18 ,,				
		Root	Sept. to Jan.	—		—				
		Oat-hay	April, May	Dec.		1,000 bundles				
		Barley	May	,,		25 bushels		,,		
CLANWILLIAM										
Clanwilliam ...	Friable	Wheat	May	Oct.	Kraal	80 fold	Rye	3	15*s.* to £1	5*s.* to 10*s.*
		Maize	Aug.	—	,,	1,000 ,,		Periodically		
		Lucerne	June	Dec.	,,	—		,,		
		Root	Aug.	,,	,,	—		,,		
		Oat-hay	May	Oct.	,,	100 ,,		3		
		Barley	,,	,,	,,	70 ,,		3		
		Tobacco	Sept.	Feb.	,,	—		Periodically		
Van Putlen's Vlei	Friable	Wheat	May	—	Kraal	12½ muids	Rye	—	10*s.*	5*s.* to 6*s.*
		Oat-hay	April	Nov.	,,	250 sheaves				
		Barley	,,	,,	,,	25 muids				

COLESBERG										
Colesberg ...	Stiff	Wheat	July	Dec.	Kraal, 50 carts	17½ muids	Potatoes	8	62*s.*6*d.*	
		Maize	Nov.	April	,, 50 ,,	100 ,,	and	4 to 5		
		Lucerne	Feb.	Periodical	,, 50 ,,	—	Oat-hay	Fortnightly		
		Root	Dec., Jan.	April	,, 50 ,,	—		4 to 12		
		Oat-hay	July	Nov., Jan.	,, 50 ,,	3,000 lbs.		5 ,, 7		
		Barley	,,	,, ,,	,, 50 ,,	3,000 ,,		6		
CRADOCK										
Conway Station	Stiff and friable	Wheat	May	Nov.	Kraal, seldom used	13 muids	Lucerne	3	£15	
		Maize	Nov.	April		20 ,,		2		
		Lucerne	March	Oct.		—		Every 1½ mos.	Lu-	
		Root	Sept., Oct.	Jan., Feb.		50 ,,		4	cerne	
		Oat-hay	April	Nov.		15 ,,		4	land	
		Barley	,,	,,		25 ,,		4	£30	
Montagu Farm...	Stiff and friable	Wheat	May	Nov.		30 muids	Lucerne	3	Lu-	£10
		Maize	Nov.	April		16 bags		2	cerne	
		Lucerne	April	—		—		1	land	
		Root	Nov.	April		150 muids		2	£30	
		Oat-hay	May	Oct.		1,200 bundles		2		
		Barley	,,	,,		1,000 bundles		2		
Horton	Stiff	Wheat	April	Nov.	Kraal	10 muids	Lucerne	3	£15	£2
		Millets	Oct.	—	,,	—	and	1 to 2		
		Maize	,,	April	,,	—	potatoes	2 ,, 3		
		Lucerne	Feb. to April	Sept. to May	,,	6 tons		2		
		Root	Aug. ,, Sept.	Spring	,,	—		4		
		Oat-hay	May	Oct.	,,	2,400 bundles		3		
		Barley	June	,,	,,	20 muids		3		
EAST-LONDON										
Fort Jackson ...	Friable, but shallow	Wheat	May	Dec.	Cattle, 5 loads	10 bags	Maize	—	—	£3 to
		Millets	Sept.	May	,, 5 ,,	17½ ,,	and			£5
		Maize	Oct.	June	,, 5 ,,	20 ,,	millets			
		Lucerne	Sept.	3 to 4 times	,, 5 ,,	3 tons				
		Root	Aug.	Dec.	,, 10 ,,	50 bags				

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
EAST LONDON—*Cont.*										
Fort Jackson—*Cont.*		Oat-hay	June	Nov.	Cattle, 4 loads	1,000 bundles				
		Barley	,,	,,	,, 5 ,,	20 bags				
Fort Jackson ...	Friable	Wheat	June	Dec.	Nil	9 bags	Root, oat-hay, maize, and Kaffir corn			
		Maize	Nov.	May	—	15 ,,				
		Root	Aug.	Dec.	—	80 ,,				
		Oat-hay	May	,,	Nil	900 bundles				
		Barley	June	,,	,,	12 bags				
Fort Jackson ...	Stiff and friable	Wheat	May	Dec.	Cattle, 4 loads	10 muids	Maize	—	—	£5
		Millets	Sept.	May	,, 4 ,,	17½ ,,				
		Maize	Oct.	June	,, 4 ,,	23 ,,				
		Lucerne	Sept.	Aug.	,, 5 ,,	2½ tons				
		Root	Aug.	Dec.	,, 8 ,,	50 muids				
		Oat-hay	June	Nov.	,, 4 ,,	10 ,,				
		Barley	,,	,,	,, 4 ,,	10 ,,				
East London ...	Stiff	Wheat	July	Dec., Jan.	Barnyard, 2 tons	—	Maize	—	—	£3
		Millets	Nov.	June	,, 2 ,,					
		Maize	,,	,,	,, 2 ,,					
		Root	Feb., Aug.	May	,, 2½ ,,					
		Oat-hay	July	Dec., Jan.	,, 2 ,,					
		Barley	April	Dec.	2 ,,					

East London ...	Mostly friable	Wheat	May, June	Nov.	Kraal, 6,000 lbs.	10 muids	Maize	—	—	£3
		Millets	Sept.	May	,, 6,000 ,,	10 ,,				
		Maize	Oct.	April	,, 6,000 ,,	23 ,,				
		Lucerne	Sept.	—	,, 6,000 ,,					
		Root	Aug.	—	,, 6,000 ,,					
		Oat-hay	June	Dec.	,, 6,000 ,,	2,000 bundles				
		Barley	,,	,,	,, 6,000 ,,	20 muids				
		Tobacco	Aug.							
FORT BEAUFORT										
Adelaide	Variable	Wheat	April	Dec., Jan.	Sheep	20 bags from 1 bag sd.	Maize,	2	10*s.* 6*d.*	7*s.* 6*d.*
		Millets	Oct.	,, ,,	,,	20 ,, ,, ,,	oat-hay,	2		
		Maize	Nov.	,, ,,	,,	20 ,, ,, ,,	and	2		
		Lucerne	March	,, ,,	,,	20 ,, ,, ,,	tobacco	2		
		Root	Aug.	Jan.	,, with bone ash	20 ,, ,, ,,		2		
		Oat-hay	April, Aug.	—	,,	20 ,, ,, ,,		2		
		Barley	April	—	,,	20 ,, ,, ,,		2		
		Tobacco	Oct.	Jan., Feb.	Cattle	20 ,, ,, ,,		2		
GEORGE										
Uitkyk	Stiff	Wheat	June	Dec.	Sheep, 7 waggons	10 muids	Tobacco	—	£1 15*s.*	£1 5*s.*
		Maize	Sept.	March	,, 7 ,,	15 ,,		2		
		Lucerne	March	—	,, 7 ,,	—		3		
		Root	Feb.	June	,, 7 ,,	—		2		
		Oat-hay	May	Nov.	,, 7 ,,	10 ,,				
		Barley	,,	,,	,, 7 ,,	10 ,,				
		Tobacco	Sept.	Dec.	,, 7 ,,					
HANOVER										
Quaggasfontein...	Stiff	Wheat	May	Dec.	Kraal	20 fold	Oats	Monthly	£12 10*s.*	
		Maize	Nov.	May	,,			,,		
		Lucerne	Oct.	Oct.	,,			Fortnightly		
		Root	,,	April	,,			,,		
		Oat-hay	July	Dec.	,,			Monthly		
		Barley	,,	,	,,			,,		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
HANOVER—*Cont.*										
Schuil Hoek (Dwaal Siding)	Variable	Wheat	May	Dec.	Kraal	—	Lucerne	6	£50	
		Maize	Oct.	April	,,	—		2		
		Lucerne	Feb.	—	,,					
		Root	Oct.	May	,,	—		3		
		Oat-hay	July	Nov., Dec.	,,					
		Barley	,,	Nov.	,,					
Zwagersfontein...	Stiff	Wheat	May, July	Dec.	Sheep, 120 carts	40 bushels	Potatoes	7 or 8	£10	
		Maize	Feb., March							
		Root	Sept.	—	,, 120 ,,					
		Oat-hay	May	Nov.	,, 120 ,,	1,500 bundles		7 ,, 8		
		Barley	,,	,,	,, 120 ,,	50 bushels		7 ,, 8		
Dwaalfontein ...	Stiff and friable	Wheat	May	Dec.	Kraal & stable	12½ muids	Lucerne	4 to 5		
		Maize	Oct.	March	,, ,,	10 ,,		3 ,, 4		
		Lucerne	Feb.	Nov., Feb.	,, ,,	—		Every 3 weeks		
		Root	Sept.	March	,, ,,	—		4		
		Oat-hay	July	Nov.	,, ,,	1,000 bundles		4 to 5		
		Barley	May	,,	,, ,,	15 to 20 muids		4 ,, 5		
Hanover... ...	Stiff	Wheat	Aug.	Dec.	Sheep	20 bags	Potatoes	4	£5	£2 10*s.*
		Maize	Nov.	March	,,	15 ,,		2		
		Barley	June	Nov.	,,	50 ,,		2		

Klipkop	Stiff and friable	Wheat	May	Dec.	Kraal, 1½ tons	12½ muids	Lucerne,	4	£37 10.	10s.
		Maize	Oct.	April, March	,, 1½ ,,	10 ,,	oat-hay,	3		
		Lucerne	Feb.	Sept., May	,, 1½ ,,	—	and	Weekly		
		Root	Sept.	May, Sept.	,, 1½ ,,	—	potatoes	3		
		Oat-hay	July	Nov., Dec.	,, 1½ ,,	15 ,,		3		
		Barley	,,	,, ,,	,, 1½ ,,	15 ,,		3		
Theefontein ...	Stiff and friable	Wheat	May	Dec.	Kraal	60 fold	Oat-hay	Monthly	About	
		Maize	Oct.	April	,,	120 ,,		Every 3 weeks	£12 10s.	
		Lucerne	March	Feb.	,,	—		Fortnightly	to	
		Root	July	Jan.	,,	—		,,	£15	
		Oat-hay	May	Dec.	,,	—		,,		
		Barley	,,	,,	,,	30 fold		,,		
HAY										
Hay (C. C.) ...	Friable	Wheat	June	Dec.	Kraal, 3½ tons	12½ muids	Potatoes	12	3s. 9d.	1s. 3d.
		Maize	Nov., Dec.	May	,, 3½ ,,	8 ,,		12		
		Lucerne	Feb.	Sept.	,, 3½ ,,	—		44		
		Root	Oct.	Dec., May	,, 3½ ,,	125 ,,		8		
		Oat-hay	June	Nov., Dec.	,, 3½ ,,	400 ,,		10		
		Barley	,,	,, ,,	,, 3½ ,,	12½ ,,		10		
		Tobacco	April	Dec., Jan.	,, 3½ ,,	5,000 lbs.		240		
HERBERT										
Douglas	Stiff and friable	Wheat	June	Oct.	Kraal & stable, 20,000 lbs.	10 muids	Oat-hay,	10	£50	
		Maize	Nov.	Feb.		18 ,,	potatoes,	6		
		Root	Aug., Feb.	May, Dec.		50 ,,	and	10 to 12		
		Oat-hay	June	Nov.		450 bundles	wheat	10		
		Barley	May	,,						
Douglas	Sandy	Wheat	May	Nov., Dec.	Kraal, 1,500 lbs.	6 muids	Potatoes	3	£10	
		Maize	Dec.	May	—	4 ,,		2		
		Lucerne	March	—	—	—		Fortnightly		
		Root	Nov. to Feb.	May	—	25 ,,		,,		
		Oat-hay	May	Oct.	—	400 bundles		3		
		Barley	,,	Nov.	—	—		3		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated	Unirrigated.
HERBERT—*Cont.*										
St. Clair	Stiff	Wheat	April, May	Oct., Nov.	Kraal		Maize and oat-hay	Weekly	£15 to £30	£5
		Maize	Oct.	May	,,			Fortnightly		
		Lucerne	Jan.	—	,,			3 to 4		
		Root	Jan., Sept.	April, May	,,			Weekly		
		Oat-hay	May	—	,,			,,		
Schmidtsdrift ...	Stiff and friable	Wheat	May	Oct.	Sheep	12½ muids	Oat-hay and potatoes	6 to 8	£25	5*s.*
		Maize	Dec.	May		10 ,,		4 ,, 6		
		Root	Aug.	Nov.		100 ,,		6 ,, 10		
		Oat-hay	April	Oct.		—		6 ,, 8		
		Barley	,,	Sept.		—		6 ,, 8		
		Tobacco	Aug.	—		—		12 ,, 16		
Douglas	Stiff	Wheat	June, July	Oct.	Sheep, 20,000 lbs.	10 to 12 muids	Wheat and oat-hay	10 ,, 12	£50	£2 10*s.*
		Maize	Nov., Dec.	Feb.		10 ,, 12 ,,		7 ,, 8		
		Lucerne	Aug.	—		—		3 ,, 4		
		Root	,,	Dec.		—		Weekly		
		Oat-hay	June	—		—		9		
		Barley	April, May	—		—		9		
HERSCHEL										
Coville	Stiff and friable	Wheat	May	Dec.		12½ muids	Wheat			
		Millets	Aug.	June		12½ ,,				
		Maize	,,	,,		12½ ,,				
		Oat-hay	July	Dec.		400 bundles				
		Barley	June	,,		10 muids				

Herschel... ...	Stiff and friable	Wheat	April	Nov.	Nil	10 muids	Kaffir corn		
		Millets	Sept.	June	,,	40 ,,			
		Maize	Oct.	April	,,	50 ,,			
		Oat-hay	May	Nov.	,,	5 ,,			
		Barley	March	,,	,,	5 ,,			
		Tobacco	Aug.	March	,,				
HOPETOWN									
Hopetown ...	Friable	Wheat	April	Nov.	Stable & kraal, 40 carts	15 muids	Wheat and oats	4	£125
		Maize	Aug.	March		75 ,,		4	
		Lucerne	April	Aug.		—		Weekly	
		Root	March & Aug.	Dec.		—		,,	
		Oat-hay	April	Oct., Nov.		500 ,,		4	
		Barley	May	Sept.		20 ,,		4	
Doornbult ...	Stiff	Wheat	April	Nov.	Kraal, 5 loads	10 muids		6	
		Maize	Sept.	March	,, 5 ,,	15 ,,		10	
		Lucerne	,,	—	—	15 ,,			
Blouwboschdam..	Friable	Wheat	April	Nov.	Kraal	75 muids	Wheat and maize	4	
		Maize	Oct.	April	,,	10 ,,		4	
		Oat-hay	May	Nov.	,,	500 sheaves		4	
		Barley	,,	,,	,,	12½ muids		4	
HUMANSDORP									
Humansdorp ...	Mostly friable	Wheat	May	Nov.	Stable, kraal, and guano	9 muids	Oat-hay	3	About £10	£2
		Maize	Aug.	Feb., March		12½ ,,		3		
		Lucerne	May	—		—		3 to 4		
		Oat-hay	June	—		6,000 lbs.		3		
		Barley	May	—		10 muids		2 to 3		
Hankey	Mostly friable	Wheat	May	Nov.	Stable and kraal, 3 loads	10 muids	Maize, barley, oat-hay, pota-toes, tobacco	3	£18 to £20	£5 to £7
		Maize	Oct.	Jan., Feb.		20 ,,		3 to 4		
		Lucerne	June, July	—		—		3		
		Oat-hay	April, July	Nov.		3,000 lbs.		3		
		Barley	,, ,,	,,		—		3		
		Tobacco	Apr., Aug., Sep.	Dec., Jan.	Kraal, 10 to 15 lds.	1,000 ,,		1		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
HUMANSDORP —*Cont.*										
Zuurbron ...	Variable	Wheat	May	Nov.		15 muids	Potatoes, maize, and oats	2 to 3	£12 to £20	£1 to £2
		Maize	Aug.	Feb.		20 ,,		2 ,, 3		
		Lucerne	May							
		Oat-hay	June	—		750 lbs.		2 ,, 3		
		Barley	May	—		20 muids		2 ,, 3		
		Tobacco	April							
Diep River ...	Friable	Wheat	May	Nov.	Sheep, 10,000 lbs. (?)	5 muids	Oats	—	—	7*s.* 6*d.*
		Oat-hay	,,	Oct.		500 bundles				
		Barley	,,	,,		12½ muids				
Assegaibush ...	Stiff, friable, and sandy	Wheat	May	Dec.	Farmyard, 20 tons	15 muids	Oat-hay and maize	3 to 4		
		Maize	Aug.	March		12½ ,,		3 ,, 4		
		Root	,,	Nov.						
		Oat-hay	May	,,	Farmyard, 10 tons	9,000 bundles		3 ,, 4		
		Barley	Feb.	,,		—		3 ,, 4		
Patentie	Alluvial	Wheat	July	Nov., Dec.	Cattle, 2 loads	10 muids	Potatoes	2	£7 10*s.*	£2 10*s.*
		Maize	Oct.	—	,, 2 ,,	12½ ,,		3		
		Lucerne	Aug. to March	—				3		
		Root	July to Sept.	Dec.				Often		
		Oat-hay	May, June	Nov.				2		
		Barley	,, ,,	,,				2		
		Tobacco	July	Jan.				As required		

The Meadows ...	Mostly friable	Wheat	April	Oct.	Cattle, 8 tons	15 bags	Maize	3	Over £2 0	Upwards of £5
		Maize	Aug.	Feb.	Pig, 8 ,,	20 ,,		4 to 5		
		Lucerne	May	Oct.	,, 8 ,,					
		Oat-hay	April	,,	Stable, 8 ,,	20 ,,		3		
		Barley	Feb.	,,	,, 8 ,,	15 ,,		3		
		Tobacco	March	Feb.	,, 8 ,,	—		2		
JANSENVILLE										
Klipplaat ...	Friable	Maize	Dec.	—				2		
		Lucerne	May & Sept.	Monthly				Every 3 wks.		
		Oat-hay	April & May	—				3		
Jansenville ...	—	Wheat	April	Dec.						
		Maize	Dec.	March						
		Lucerne	March to June							
		Oat-hay	April ,, ,,	Sept.						
		Barley	,, ,, ,,	,,						
		Tobacco	March							
Sundays River ... Uitkomst (?)	Stiff and friable	Wheat	April, June	When ripe		15 bags	Maize, pumpkins, wheat & oat-hay	1	£10 to £15	1*s.* 3*d.* to 12*s.*6*d.*
		Maize	Dec.	,, ,,		35 ,,		1		
		Lucerne	Aug.	,, ,,		—		Monthly		
		Oat-hay	April, June	,, ,,		500 bundles		1		
		Barley	,, ,,	,, ,,		500 ,,		1		
KENHARDT										
Kenhardt ...	Mostly stiff	Wheat	May	Nov.	Nil		Wheat, maize, barley & oat-hay	4	About £10 to £16	About £6 to £10 10*s.*
		Maize	Oct., Nov.	March	,,			5 to 7		
		Oat-hay	May	Oct.	,,			4 ,, 5		
		Barley	,,	,,	,,			4 ,, 5		
KING WILLIAM'S TOWN										
Middle Drift ...	Friable	Wheat	June	Dec.	Nil	—	Wheat		£3 5*s.*	41*s.*8*d.*
		Millets	Oct.	June	,,	3 muids				

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
KING WILLIAM'S TOWN—*Cont.*										
Middle Drift—*Cont.*	Friable	Maize	Oct.	June	Nil.	3 muids				
		Root	Jan.	,,	,,	2 ,,				
		Oat-hay	June	Dec.	,,	4 ,,				
		Barley	,,	,,	,,	4 ,,				
		Tobacco	,,	March	,,	2½ ,,				
Gxulu	Friable	Wheat	April	Dec.	Kraal, 6 waggons	5 bags	Kaffir corn & maize	—	About £7 10*s.*	About £6
		Millets	Sept.	April	,, 6 ,,	6 ,,				
		Maize	Oct.	May	,, 6 ,,	6 ,,				
		Potatoes	Sept.	Dec.	,, 6 ,,	50 ,,				
		Oat-hay	June	,,	,, 6 ,,	1,000 bdls. per bag seed				
		Barley	July	—	,, 6 ,,	5 bags				
Fort Cox ...	Friable	Wheat	April, June	Nov.		32 bushels	Maize	—	£25 to £30	£10
		Millets	Sept.	April		48 ,,				
		Maize	Oct., Dec.	Mar., April		45 ,,				
		Oat-hay	April, May	Oct., Nov.		30 ,,				
		Barley	,, ,,	,, ,,		30 ,,				
		Tobacco	March	Dec. to April	Cattle, 50,000 lbs.	—		4		
Keiskama Hoek..	Friable	Wheat	July	Dec.	Kraal, 5 waggons	8 muids	Kaffir corn	3	£5 to £6	£4
		Millets	Sept.	June	,, 5 ,,	6 ,,		3		
		Maize	Nov.	July	,, 5 ,,	7 ,,		3		
		Lucerne	Aug.	Oct.	,, 5 ,,	—		3		

		Root	Aug., Jan.	Dec., April	Kraal, 5 waggons	20 muids				
		Oat-hay	July	Dec.	,, 5 ,,	1,000 bundles		3		
		Barley	May	Oct.	,, 5 ,,	10 muids		3		
		Tobacco	April	—	,, 5 ,,	400 lbs.				
Kei Road ...	Stiff	Wheat	May to Aug.	Nov., Dec.	Farmyard	20 bushels	Wheat	—	£10	£4
		Maize	Oct. ,, Dec.	May	,,	30 ,,	and			
		Lucerne	Feb.	—	,,		maize			
		Root	Aug. to Feb.	—	Artificial;					
		Oat-hay	July, Aug.	Nov., Dec.	Farmyard	1,000 bundles				
		Barley	Feb., March	June, Nov.	,,	30 bushels				
Tamacha ...	—	Wheat	May	Dec.	Nil	5 muids	Maize			
		Millets	Sept.	April	,,					
		Maize	Nov.	May	,,					
		Lucerne	April	—	,,					
		Root	Aug.	April	,,					
		Oat-hay	July	Dec.	,,					
		Barley	June	,,	,,					
KNYSNA										
Goukama ...	Stiff and friable	Wheat	June	Dec.		7½ muids	Maize	1	—	£2 10*s.*
		Maize	Aug.	Feb., Mar.		6 ,,	and	2		
		Root	Sept.	Dec.	Kraal,	100 ,,	potatoes	1		
		Oat-hay	May	Nov.	3½ waggons	15 ,,		1		
		Barley	July	,,		10 ,,		1		
		Tobacco	Sept.	Jan.		—		1		
Knysna	Stiff	Wheat	June	Dec., Jan.		20 fold	Potatoes	—	£2 to	£1 to
		Maize	Aug.	Jan.		160 ,,			£2 10*s.*	£1 5*s.*
		Lucerne	,,	Feb.	Kraal and					
		Root	,,	April & Nov.	stable,	30 ,,				
		Oat-hay	June	Nov.	8 waggons	20 ,,				
		Barley	,,	,,		20 to 30 fold				
		Tobacco	,,	—						

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
KNYSNA—*Cont.*										
Komflats ...	Friable	Wheat	June	Nov.	Cattle and Stable, 4 waggons	18 muids	Tobacco	—	£5	£2 10s.
		Maize	Sept.	March		10 ,,				
		Root	Aug.	Dec.		75 ,,				
		Oat-hay	June	Nov.		4,500 lbs.				
		Barley	,,	,,		15 muids				
		Tobacco	Sept.	Jan.		1,250 lbs.				
Quarrywood ...	Friable	Wheat	June, July	Dec.	Farm & guano, 3 to 5 loads	15 muids	Oat-hay, potatoes and tobacco	—	£3 to £5	£1 10s. to £2 10s.
		Maize	Aug.	Feb.	Farm 1 load, guano 1 bag	100 ,,				
		Root	,,	—	Farm 3 to 5 loads					
		Oat-hay	May, June	Oct.	Nil	750 bundles				
		Barley	July	Nov.	Farm 3 loads, guano 100lbs.	7½ muids				
		Tobacco	April, May	Nov., Dec.	Farm 1½ loads	1,500 lbs.		2		
KOMGHA										
Komghà	Stiff and friable	Maize	Oct.	May, June	Kraal, 3 to 4 waggons	7½ to 9 muids	Maize	—	£4 to £6	£2 to £3
		Oat-hay	May	Oct., Nov.						
		Barley	April to Sept.	,, ,,						
Ewanrigg ...	Friable	Maize	Oct.	April	—	8 muids	Oat-hay and Maize			
		Lucerne	Dec.							
		Oat-hay	July	Dec.						

Annexation ...	Friable	Wheat	June	Dec.		2,000 to 4,000 lbs.	Maize and oat-hay			
		Maize	Oct.	March	Cattle, 2,000 to 3,000 lbs.	,, ,,				
		Lucerne	Aug.	Dec.		,, ,,				
		Root	Sept.	June		,, ,,				
		Oat-hay	Aug.	Dec.		,, ,,				
		Barley	,,	,,		,, ,,				
		Tobacco	June	Jan.		,, ,,				
KURUMAN										
Kuruman ...	Friable	Wheat	May	Oct.		22½ muids	Maize	Fortnightly	£20	£2 10*s.*
		Millets	Oct.	April	Kraal and stable, 225 bushels	30 ,,		Monthly		
		Maize	Dec.	,,		15 ,,		,,		
		Root	June	—		—				
		Oat-hay	,,	Oct.		600lbs.		Fortnightly		
		Barley	,,	,,		22½ muids		,,		
		Tobacco	,,	Jan.		2,250lbs.		,,		
Kuruman ...	Friable	Wheat	May	Nov.	Kraal, 30 tons	10 muids	Maize	4	5*s.*	1*s.*
		Millets	Nov.	May	,, 30 ,,	15 ,,		2		
		Maize	,,	April	,, 30 ,,	15 ,,		2		
		Lucerne	Sept.	Oct.	,, 30 ,,	—		6		
		Root	Oct.	Feb.	,, 30 ,,	75 ,,		3		
		Oat-hay	May	Nov.	,, 30 ,,	5,000lbs.		4		
		Barley	,,	,,	,, 30 ,,	15 muids		4		
		Tobacco	Sept.	Feb.	,, 30 ,,					
LADISMITH										
Zeekoegatsdrift...	Friable	Wheat	May	Dec.	—	7½ muids	Lucerne	2		
		Maize	Nov.	April	—	5 ,,		1		
		Lucerne	April	March	—	1½ ,,		1		
		Root	Aug.	Dec.	Ordinary, 20 loads	100 ,,		3		
		Oat-hay	May	Oct.	—	15 ,,		1		
		Barley	,,	,,	—	22½ ,,		1		
		Tobacco	Dec.	March	Ordinary					

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
LADISMITH—*Cont.*										
Buffelskloof ..	Friable	Wheat	June	Nov.	Nil	10 muids	Lucerne	3	£50	About £1
		Maize	Sept.	March	,,	10 ,,		3		
		Lucerne	April	,,	,,	6 ,,		5		
		Oat-hay	,,	Oct.	,,	500bundles		2		
		Barley	May	,,	,,	12½ muids		3		
Weltevreden ...	Stiff and friable	Wheat	May, June	Nov., Dec.	Cattle, 10 loads	10 muids	Maize	2 to 3	£7 10s.	£2 10s.
		Maize	Sept., Oct.	May	—	15 ,,		3		
		Lucerne	April, May	Oct., Feb.	—	300 sheaves		Several		
		Root	Nov. to Feb.	April	,, 10 ,,	10 muids		,,		
		Oat-hay	May, June	Sept.	,, 10 ,,	400 sheaves		3		
		Barley	,, ,,	Oct.	,, 10 ,,	15 muids		2 to 3		
		Tobacco	Sept., Oct.	Jan.	,, 10 ,,	—		Several		
MALMESBURY										
Brakfontein ...	Stiff	Wheat	April, May	Nov	—	—	Hay			
		Oat-hay	,, ,,	Oct.						
		Barley	,, ,,	,,						
Wynkellers Hoek	—	Wheat	June	Nov.	Sheep and stable	10 muids				
		Oat-hay	May	Oct.	—	12½ ,,				
		Barley	,,	,,	—	12½ ,,				

Wolvedans ...	Stiff and friable	Wheat	May	Nov.	Cattle, 2,500lbs., guano, 70 to 100lbs.	6 bushels	Oats		
		Maize	Sept.	March	Cattle, 3,000lbs., guano, 70 to 100lbs.				
		Oat-hay	April	Oct.	Cattle, 2,000lbs., guano, 70 to 100lbs.	9 ,,			
		Barley	May	Nov.	Cattle, 3,000lbs., guano, 70 to 100lbs.	9 ,,			
MIDDELBURG									
Honingkrans ...	Stiff and friable	Wheat	April	Nov.		20 to 30 bushels	Lucerne	4 to 5	£2 10s.
		Millets	Oct.	May		40 ,, 50 ,,		3 ,, 4	to £5
		Maize	,,	April		30 ,, 40 ,,		2 ,, 3	
		Lucerne	Feb. to April	Sept. to May		18,000lbs.		6 ,, 8	
		Root	Aug.	June ,, July		20,000lbs.		3 ,, 4	
		Oat-hay	April to May	Oct.		6,000lbs.		3 ,, 4	
		Barley	,, ,, ,,	,,		40 to 50 bushels		3 ,, 4	
		Tobacco	Aug.	April		—		4 ,, 5	
Sandfontein ...	Friable	Wheat	May	Dec.	Nil	10 muids	Potatoes	3	£2 10s.
		Lucerne	Dec.	,,					to £10
		Root	Oct.	March	—	50 ,,		2	
		Oat-hay	Aug.	Dec.	—	—		3	
		Barley	,,	,,	—	15 ,,		3	
Schoombeeksklip	Friable	Wheat	May	Dec.	Sheep, 50 carts	7½ muids	Potatoes	6	£10
		Millets	Oct.	July	,, 50 ,,	7½ ,,		4	
		Maize	,,	,,	,, 50 ,,	7½ ,,		5	
		Lucerne	April	Oct.	,, 50 ,,	7½ ,,		Weekly	
		Root	Feb.	July	,, 50 ,,	7½ ,,		,,	
		Oat-hay	May	Nov.	,, 50 ,,	7½ ,,		6	
		Barley	,,	,,	,, 50 ,,	7½ ,,		6	

APPENDIX C—*Continued*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
MIDDELBURG—*Cont.*										
Vlakfontein ...	Friable	Wheat	May	Dec.	Kraal, 10 wagons	15 muids	Oat-hay	3	£1 to	
		Maize	Oct.	April	,, 10 ,,	—	and	3	£1 5*s*.	
		Lucerne	March	—	,, 10 ,,	—	lucerne	12		
		Oat-hay	May	Oct.	,, 10 ,,	500 bundles		3		
		Barley	,,	—	,, 10 ,,	500 ,,		3		
Bowden Hall ...	Stiff and friable	Wheat	April	Dec.	Nil	20 to 25 fold	Lucerne	4 to 5	About	
		Maize	Oct.	April	,,	—		3 ,, 4	£10	
		Lucerne	Feb.	Nov.	,,	—		3		
		Root	Oct.	,,	,,	—		3		
		Oat-hay	May	,,	,,	—		3 to 4		
		Barley	,,	Dec.	,,	25 fold		3 ,, 4		
Moordenaar's Poort	—	Wheat	April	Dec.	Dung	30 fold		5		
		Maize	Oct.	May	,,	50 ,,		4		
		Lucerne	Aug.	—	—	—		2		
		Oat-hay	April	Oct.	,,	35 ,,		4		
		Barley	,,	Nov.	,,	35 ,,		4		
Culmstock ...	Stiff and friable	Wheat	April	Nov.	Stable and kraal		Lucerne	3 to 4	Over	
		Millets	Oct.	April	—			3 ,, 4	£10	
		Lucerne	March	Oct. to May	—			Monthly		
		Oat-hay	July	Oct.	—			3 to 4		
		Barley	Winter	,,	—			3 ,, 4		

Conway	Stiff and friable	Wheat	May	Dec.	Kraal	10 muids	Lucerne	4	£20 to £35	
		Maize	Nov.	April	,,	7½ ,,		3		
		Lucerne	March, April	Oct. to April	,,	—		Every 6 wks.		
		Root	Oct.	May	,,	50 ,,		2		
		Oat-hay	April, May	Nov.	,,	17½ ,,		4		
		Barley	May, June	,,	,,	22½ ,,		4		
Opperman's Kraal	Stiff	Wheat	May	Dec.	Kraal, 100 carts	10 to 12½ muids	Potatoes	3 to 5		
		Millets	Oct.	April	,, 100 ,,	—		5 ,, 8		
		Maize	,,	May	,, 100 ,,	—		5 ,, 8		
		Lucerne	Feb.	April	,, 100 ,,	—		Monthly		
		Root	Oct.	—	,, 100 ,,	—		Fortnightly		
		Oat-hay	Aug.	Dec.	,, 100 ,,	750 to 1,000 bundles		3 to 5		
		Barley	,,	,,	,, 100 ,,	12½ to 15 muids		3 ,, 5		
MOSSEL BAY										
Brandwacht ...	Friable	Wheat	May	Dec.		17½ to 20 muids	Tobacco	3	Over £50	£12 10s.
		Maize	Oct.	Feb.		7½ muids		3		
		Lucerne	March	Dec.		—		Every 2 mths.		
		Root	May	—	Sheep & goat, 2 loads					
		Oat-hay	,,	,,		17½ to 20 muids		3		
		Barley	,,	,,		17½ ,, 20 ,,		3		
		Tobacco	May and Sept.	Jan.		4,000lbs.		5		
Geelbeks Vlei ...	—	Wheat	June, July	Dec., Jan.	Kraal and stable, 2½ loads	5 muids	Barley, oats,	1	£7 10s. to £10	£1
		Maize	Sept.	March	Kraal and stable, 2½ to 5 loads	25 ,,	maize, and	2		
		Lucerne	Aug.	Summer	Kraal and stable, 5 loads	—	potatoes	2		
		Root	Feb.	July, Aug.	Kraal and stable, 7½ loads	15 ,,		2		
		Oat-hay	May, June	Nov.	Kraal and stable, 2½ loads	20 ,,		1		
		Barley	,,	,,	Kraal and stable, 2½ loads	—		1		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
MOSSEL BAY—*Cont.*										
Melkboom ...	Friable	Wheat	June	Dec.		10 muids	Oat-hay	3	£5 to	£1 10*s.*
		Maize	Sept.	March		12½ ,,		4	£25	
		Lucerne	May	—		—		Monthly		
		Oat-hay	,,	Nov.		12½ ,,		3		
		Barley	,,			10 ,,		3		
Haartebeest Kraal	Friable	Wheat	June	Nov.	Kraal, 2½ loads	10 muids	Oat-hay	3	About	About
		Maize	Sept.	Feb.	,, 2½ ,,	15 ,,		2	£7 10*s.*	£2 10*s.*
		Lucerne	March	Jan.	,, 2½ ,,	5 ,,		2		
		Root	Dec.	June	,, 2½ ,,	25 ,,		4		
		Oat-hay	May	Nov.	,, 2½ ,,	12½ ,,		2		
		Barley	,,	Dec.	,, 2½ ,,	15 ,,		2		
		Tobacco	April	Nov.	,, 2½ ,,	500lbs.		4 to 5		
NAMAQUALAND										
Doeksteen	Variable	Wheat	May	Nov.	Stable or kraal	100 fold	Wheat	—	£40	£10
Bowesdorp		Maize	Oct.	—	—	200 ,,	and			
		Lucerne	Sept.	—	,, or ,,	—	lucerne	Bi-weekly		
		Oat-hay	May	,,	—	100 ,,				
		Barley	,,	,,	—	100 ,,				
		Tobacco	Sept.	Feb.	—	—		,,		
		Root	,,	Dec.	,, or ,,	10 ,,		,,		
OUDTSHOORN										
Riet Vlei ...	Friable	Wheat	June			1,400lbs	Lucerne	3	£100	£25
		Maize	Dec.			—		3		

		Lucerne	April			—		2		
		Oat-hay	June			—		3		
		Barley	,,			—		3		
		Tobacco	Oct. to Dec.		Goat and sheep	30 muids		6		
Groot Kraal ...	Mostly friable	Wheat	June	Dec.	Nil	11 muids	Tobacco	3	£50 to	
		Maize	Sept.	March	,,	17½ ,,		3	£150	
		Lucerne	June	,,	,,	3½ ,,		6		
		Root	Sept.	Dec. to May	,,	100 ,,		Weekly		
		Oat-hay	June	Nov.	,,	37½ ,,		2		
		Barley	,,	,,	,,	12 ,,		2		
		Tobacco	Nov.	Jan. to May	Kraal, 12 tons	2,000lbs.		Weekly		
Kruis Rivier ...	Stiff and friable	Wheat	June	Nov.	40 bags	7½ muids	Tobacco	3	£75	
		Millets	,,	,,	—	10 ,,		2		
		Maize	Nov.	April	—	10 ,,		3		
		Lucerne	March	Feb.	—	1½ ,,		2		
		Root	July	Jan.	—	—		5		
		Oat-hay	June	Nov.	—	13 ,,		3		
		Barley	,,	,,	—	12½ ,,		3		
		Tobacco	May	Feb.	—	—		6		
Oudtshoorn ...	Stiff and friable	Wheat	May	Nov.	Kraal, 1½ wagons	12½ muids	Lucerne	2	£12 10s.	
		Maize	Sept.	Jan.	,, 1½ ,,	12½ ,,		1	to £50	
		Lucerne	Sept. to April	Nov.	,, 1½ ,,	—		2		
		Oat-hay	May	,,	,, 1½ ,,	750 bundles		2		
		Barley	,,	,,	,, 1½ ,,	10 muids		2		
		Tobacco	Oct., Nov.	Jan.	,, 1½ ,,	2,500 lbs.		4		
Warm Waters ...	Friable	Wheat	May	Nov., Dec.	Nil	15 muids	Lucerne	1	£25 to	£25 to
		Maize	Oct.	,, ,,	,,	—		1	£37 10s.	£37 10s.
		Lucerne	May	,, ,,	,,	—		1		
		Root	Sept.	,, ,,	,,	—		1		
		Oat-hay	May	,, ,,	,,	—		1		
		Barley	,,	,, ,,	,,	—		1		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
OUDTSHOORN —*Cont.*										
Meiring's Poort	Friable	Wheat	May	Nov.		7½ bags		3	£50	£5
		Maize	Sept.	March		15 ,,		3		
		Lucerne	April	Jan.		2½ ,,		3		
		Root	May	Dec.		—		4		
		Oat-hay	,,	Oct.		20 ,,		3		
		Barley	,,	Nov.		25 ,,		3		
		Tobacco	Oct.	Jan.	Goat, 1½ loads	4,000 lbs.		10		
Oudtshoorn ...	Stiff and friable	Wheat	June	Nov., Dec.	Cow, 1 load	7½ muids	Potatoes	2	£25 to £250	10*s.* to 20*s.*
		Millets	,,	Nov.		7½ ,,		2		
		Maize	Sept., Dec.	Feb.		7½ ,,		2		
		Lucerne	March, June	,,		—		2		
		Root	Sept.	Jan.		—		2		
		Oat-hay	May	Oct.		10 bags		2		
		Barley	,,	,,		10 ,,		2		
		Tobacco	Sept.	Jan.		—		10		
Saffraan River ...	Friable	Wheat	June	Nov.		10 muids		2	£25	£1 10*s.*
		Maize	Sept.	March		10 ,,		3		
		Lucerne	Aug.	Feb.		5 ,,		2		
		Oat-hay	June	Oct.		12½ ,,		2		
		Barley	May	Nov.		12½ ,,		2		
		Tobacco	Aug.	Dec.		2,000 lbs.		4		

PAARL										
Paardenberg ...	Stiff	Wheat	May	Oct.	Superph., 133 lbs.	6 muids	Oat-hay	—	—	£2
		Oat-hay	April, May	,,	,, 133 ,,	5,250 lbs.				
		Barley	May	,,	,, 133 ,,	17½ muids				
Eikeboom, Hermon	Stiff and friable	Wheat	April	Nov.	Superph., 560 lbs.	7½ muids	Oat-hay	—	—	£3 to £4
		Oat-hay	,,	Oct.	,, 560 ,,	20 ,,				
		Barley	,,	,,	,, 560 ,,	20 ,,				
PEDDIE										
Lessendrum	Friable	Maize	Oct.	April	Kraal, 2 tons	30 muids	Wheat	—	—	30*s.*
		Lucerne	July	Nov.	,, 2 ,,	1 ton				
		Root	Aug.	Dec.	,, 2 ,,	4 tons				
		Oat-hay	June	Nov.	,, 2 ,,	3 ,,				
		Barley	April	,,	,, 2 ,,	40 bushels				
		Tobacco	,,	Feb.	,, 2 ,,	½ ton				
		Wheat	June	Dec.	,, 2 ,,	20 muids				
		Millets	Sept.	March	,, 2 ,,	12 ,,				
Barnfather	Stiff and Friable	Wheat	June	Dec.	Kraal, 3,000 lbs.	4 muids	Maize, Kaffir corn, and oat-hay	—	—	10*s.*
		Millets	Sept.	Feb.	,, 3,000 ,,	5 ,,				
		Maize	Oct.	March	,, 3,000 ,,	4 ,,				
		Oat-hay	July	Dec.	,, 3,000 ,,	6 ,,				
		Barley	May	Oct.	,. 3,000 ,,	6 ,,				
PHILIPSTOWN										
Modderfontein ...	Stiff	Wheat	July	Nov.	Sheep, 8 tons	12½ muids	Wheat	4	15*s.*	
		Millets	Oct.	April				4		
		Maize	,,	,,				4		
		Lucerne	Sept.	,,				4		
		Root	July	,,				Frequently		
		Oat-hay	May	Oct.				4		
		Barley	,,	,,				4		
De Aar	Stiff and Friable	Wheat	July	Dec.	Kraal, 50 carts	10 muids		6	£2 10*s.*	
		Maize	Oct.	Mar.	,, 50 ,,	10 ,,		6		
		Lucerne	Feb.	Nov.	,, 50 ,,	—		Weekly		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for Sowing.	Seasons for Reaping.	Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates. Irrigated.	Land Values, per acre, Farmers' Estimates. Unirrigated.
PHILIPSTOWN —*Cont.*										
De Aar—*Cont.*	Stiff and friable	Root	July	Jan.	Kraal, 50 carts	—		Weekly		
		Oat-hay	May	Oct.	,, 50 ,,	12½ muids.		6		
		Barley	,,	,,	,, 50 ,,	12½ ,,		6		
PIQUETBERG										
Zoutkloof ...	Friable	Wheat	May, June	Nov.	Dung, 12 loads	5 muids	Barley			
		Oat-hay	May	Oct.	—	5 ,,				
		Barley	,,	,,	—	6 ,,				
		Tobacco	Oct.	Jan.						
Meintjes' Kraal	Friable	Wheat	May	Nov.		10 muids	Cereals	—	£1 10*s.*	15*s.*
		Oat-hay	,,	Oct.		2,500 lbs.	and			
		Barley	,,	,,		15 muids	tobacco			
PRIESKA										
Prieska	Friable	Wheat	May	Nov.	Kraal, 4 waggons		Potatoes	4	£1 10*s.*	3*s.* 9*d.*
		Maize	Nov.	March	,, 4 ,,		and	6		
		Oat-hay	May	Oct.	,, 4 ,,		wheat	6		
		Barley	,,	Nov.	,, 4 ,,			6		
Prieska	Friable	Wheat	June	Nov.	Stable	25 muids (?)			—	5*s*
		Maize	Dec.	May	,,	25 ,, ,,				
		Root	Feb. and Aug.	June	,,	25 ,, ,,		Every 8 to 15 days		
		Oat-hay	June	Oct.	,,	25 ,, ,,				
		Barley	,,	,,	,,	25 ,, ,,				

Prieska	Friable	Wheat	May	Oct.			Potatoes	12	£37 10*s.*	
		Maize	Nov.	May	Stable and and Kraal, about ½ ton			8 to 10		
		Root	Feb. and Aug.	,,				8 ,, 10		
		Oat-hay	May	Oct.				12		
		Barley	,,	,,				12		
PRINCE ALBERT										
Angeliers Bosch .	Stiff	Wheat	May	Dec.		30 muids	Oat-hay	10	£25	
		Maize	Nov.	April	Sheep and Goat, 5 waggon loads.	10 ,,		4		
		Lucerne	,,	March		—		12		
		Root	Sept.	Nov.		—		12		
		Oat-hay	May	Oct.		40 ,,		5		
		Barley	,,	,,		20 ,,		5		
		Tobacco	Sept.	—						
Koodoosfontein	Friable	Wheat	June	Nov.	Sheep		Oat-hay and barley	Fortnightly	£2 10*s.*	5*s.*
		Maize	Nov.	April	,,			Weekly		
		Lucerne	Aug.	—	,,			Bi-weekly		
		Oat-hay	April	Oct.	,,			Fortnightly		
		Barley	,,	,,	,,			,,		
Zeekoegat ...	Friable	Wheat	May	Nov.		10 muids	Cereals	4	£1 10*s.* to £2	2*s.* to 3*s.*
		Millet	Dec.	April		—		3		
		Maize	,,	,,		15 ,,		3		
		Lucerne	Feb.	May		500 lbs.		5		
		Root	Sept.	Feb.		240 bushels		4		
		Oat-hay	April	Oct.		15 muids		5		
		Barley	July	Nov.		18 ,,		5		
		Tobacco	Aug.	March		1,250 lbs.		3		
Vrolykheid ...	Stiff and friable	Wheat	July	Nov.	Goat and Cow	10 to 15 muids	Oats	3	£1 to £1 10*s.*	5*s.*
		Maize	Dec.	April	,,	30 ,,		2		
		Lucerne	March	Dec.	,,	—		2		
		Oat-hay	July	Nov.	,,	—		3		
		Barley	Aug.	Dec.	,,	10 ,,		3		
		Tobacco	Oct.	Jan.	,,	—		4		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
PRINCE ALBERT —*Cont.*										
Seven Weeks' Poort	Friable	Wheat	April	Nov.	Goat and Sheep, 15 bags	7½ muids		1		
		Millet	Oct.	March						
		Maize	,,	,,		6 ,,		3		
		Lucerne	April	Nov.	Goat and Sheep, 15 bags	—		2		
		Oat-hay	,,	Oct.		400 bundles		1		
		Barley	,,	,,		9 muids		1		
		Tobacco	,,	Jan.	Cattle, 100 bags	2,500 lbs.		3		
Prince Albert ...	Friable	Wheat	May	Nov.	Kraal, 10 tons	20 muids	Oat-hay	4 to 5	£45 to £50	3*s.* 9*d.* to 5*s.*
		Maize	Nov., Dec.	March, April	,, 10 ,,	17½ ,,		4 ,, 6		
		Lucerne	Aug., Sept.	Jan.	,, 10 ,,	—		6 ,, 8		
		Root	Sept., Oct.	Dec.	,, 10 ,,	40 ,,		6 ,, 8		
		Oat-hay	April, May	Oct.	,, 10 ,,	45 ,,		4 ,, 5		
		Barley	,, ,,	,,	,, 10 ,,	30 ,,		4 ,, 5		
		Tobacco	Oct.	March	,, 10 ,,	—		8 ,, 12		
QUEENS TOWN										
Kamastone ...	Friable	Wheat	March	Nov.	Nil	15 bags	Oat-hay	3	£6	£4
		Millets	Sept.	April	,,	5 ,,	and	2		
		Maize	,,	May	,,	7½ ,,	potatoes	2		
		Lucerne	Feb. to March	—	,,	—		5		
		Oat-hay	May	Nov.	,,	750 bundles		4		
		Barley	,,	,,	,,	12½ bags		3		
		Tobacco	April, May	March	Kraal, 20 wagons			6		

Zetland, Baileyton	Friable	Wheat	April	Oct.	Kraal, 12½ tons	30 muids	Wheat and oats	2	£2 10s.	£1
		Maize	Oct.	Dec.	,, 12½ ,,	25		2 to 3		
		Lucerne	March	Oct.	,, 12½ ,,	—		3		
		Root	April	July	,, 12½ ,,	—		3		
		Oat-hay	,,	Oct.	,, 12½ ,,	27½ ,,		4		
		Barley	May	,,	,, 12½ ,,	20		4		
Quebe, Quebe, Bolotwa	Friable	Wheat	April	Nov.		5 muids	Oats and maize	2	£12 10s.	£1 10s.
		Millets	Oct.	June		6 ,,				
		Maize	Nov.	May		7½ ,,				
		Lucerne	Feb., March	Oct. to May	Kraal,	—		4		
		Root	Feb.	July	10 to 20 tons	—		2		
		Oat-hay	April, May	Oct.		7½ ,,		2		
		Barley	April	,,		6 ,,		3		
		Tobacco	Aug.	Jan., April		—		4		
Oxton, Whittlesea	Stiff and friable	Wheat	April	Nov.		10 muids	Wheat	3	£5	£3
		Maize	Oct.	May		15 ,,		3		
		Oat-hay	May	Nov.		—		3		
		Barley	,,	,,		—				
Imvani	Stiff	Wheat	April	Dec.	Kraal	10 muids	Oat-hay	2 to 3	£10	£1
		Maize	Oct., Nov.	April	,,	10 ,,		1		
		Lucerne	Feb.	—	,,	—				
		Root	—	—	,,	—				
		Oat-hay	April	Oct.	,,	600 bundles		2 to 3		
		Barley	May	—	,,	15 muids		2 ,, 3		
		Tobacco	Sept.	—	,,	—		Frequent		
Bowker's Park ...	Friable	Wheat	April	Nov.	Nil		Oats	3	£2 10s.	£1 10s.
		Maize	Nov.	Feb.	,,			3		
		Lucerne	Feb.	—	,,					
		Root	Oct.	—	,,					
		Oat-hay	May	Oct.	,,			3		
		Barley	,,	,,	,,			3		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
RICHMOND										
Vogelstruisfontein	Friable	Wheat	April	Dec.	Kraal, 30 carts	15 muids	Wheat,	8	£50	
		Maize	Oct.	May	—	10 ,,	barley,	5 or 6		
		Lucerne	Jan.	Nov.	—	—	and oats	20		
		Oat-hay	July	Dec.	—	750 bundles		8		
		Barley	,,	,,	—	20 muids		8		
Richmond ...	—	Wheat	May	Dec.	Kraal	20 to 25 muids	Potatoes	Fortnightly	£150	
		Maize	Sept.	April	,,	7½ muids	and	,,		
		Lucerne	Oct.	Nov.	,,	—	cereals	Weekly		
		Root	Sept.	April, May	,,	—		,,		
		Oat-hay	May	Nov.	,,	30 ,,		Fortnightly		
		Barley	,,	,,	,,	30 ,,		,,		
Dassiesfontein ...	Stiff and friable	Wheat	May to Aug.	Jan.	Kraal		Potatoes	5		
		Maize	Oct.	April	—		and	5		
		Lucerne	Feb. & Sept.	3 times	—		lucerne.	2 to 3		
		Root	Nov.	Winter						
		Oat-hay	Aug., Sept.	Dec.						
		Barley	,, ,,	,,						
RIVERSDALE										
Melkhoutfontein	Friable	Maize	Nov.	April	Kraal, 10 waggons	17½ muids	Maize	20	£50	£25
		Lucerne	July	Oct.	—	250 bundles		15		
		Root	Aug.	Dec.	—	25 muids		20		
		Oat-hay	April	Oct.	—	400 bundles		8		
		Barley	June	Nov.	—	15 ,,		8		

Corrente River ...	Friable	Wheat	May	Dec.		10 bags	Tobacco	3	£2	£1
		Maize	Oct.	Feb.		12½ ,,	and	4		
		Lucerne	Aug.	Dec.		—	wheat.	10		
		Root	Feb.	May						
		Oat-hay	April	Oct.		400 bundles		3		
		Barley	May	Nov.		17½ bags		3		
		Tobacco	Oct.	Feb.		—		4		
Spiegels River ...	Stiff	Wheat	June	Nov.	Sheep	5 muids	Tobacco	2	£1	10*s.*
		Maize	Sept.	April		6 ,,	and	2		
		Lucerne	April	Nov.		3 ,,	potatoes.	Monthly		
		Root	,,	,,		—		,,		
		Oat-hay	,,	Oct.		25 ,,				
		Barley	May	Nov.		12 ,,				
		Tobacco	April	Dec.		1,000 lbs.				
Boschfontein ...	Stiff and friable	Wheat	May, June	Dec.		4 to 6 muids	Tobacco	2	£2 10*s.*	£1 5*s.*
		Maize	Sept.	Feb.		—	and	2 to 3	to	to
		Lucerne	April	Dec.		—	potatoes	2 ,, 3	£6	£1 10*s.*
		Root	Aug., Sept.	Oct.	Superphos., ¾ bag	—		2 ,, 3		
		Oat-hay	April, May	Oct., Nov.		—		1		
		Barley	May	Oct.		—		1		
		Tobacco	April	Jan.						
Riversdale ...	Stiff and friable	Wheat	July	Dec.		15 muids	Oat-hay,	2	£1 10*s.*	5*s.*
		Maize	Oct.	March		—	barley,	3	to	to
		Lucerne	June	Oct.	Kraal and		and		£50	£1 10*s.*
		Oat-hay	April	,,	farmyard	—	tobacco	2		
		Barley	May	,,		—		2		
		Tobacco	Sept.	Jan.						
Riversdale ...	Friable	Wheat	May, June	Nov., Dec.	Nil	20 fold	Wheat	3	£100	£1
		Millets	April	Nov.	,,	15 ,,	and oats	3		
		Maize	Dec.	April	,,	30 ,,		3		
		Lucerne	March, April	—	,,	—		3		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for Sowing.	Seasons for Reaping.	Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates. Irrigated.	Land Values, per acre, Farmers' Estimates. Unirrigated.
RIVERSDALE—*Cont.*										
Riversdale—*Cont.*	Friable	Root	Feb., Aug.	May & Dec.	Nil	10 fold		4		
		Oat-hay	May, June	Oct., Nov.	,,	17½ ,,		3		
		Barley	,, ,,	,, ,,	,,	17½ ,,		3		
ROBERTSON										
Boschjesveld ...	Stiff and friable	Wheat	May	Nov.	Goat, 3 waggons	15 muids	Maize	3	£10	
		Maize	Aug.	March	,, 3 ,,	20 ,,		3		
		Lucerne	April	Nov.	—	2½ ,,		8		
		Root	Aug.	Dec.	—	—		6		
		Oat-hay	April	Oct.	,, 1½ ,,	20 ,,		1		
		Barley	,,	,,	,, 1½ ,,	20 ,,		2		
Robertson ...	Stiff and friable	Wheat	May	Nov.	Kraal and stable	10 muids		2	£10 to £15	£2 10*s.*
		Maize	Aug.	Jan.	,,	—		2		
		Lucerne	April	—	,,	—		Fortnightly		
		Oat-hay	May	—	,,	15 ,,		2		
		Barley	,,	—	,,	17½ ,,		3		
Zandvliet, P. O. Ashton	Friable	Wheat	May	Nov.	Sheep	10 to 15 muids	Potatoes	1	£50 to £150	£2 10*s.*
		Maize	Oct.	—	,,	10 to 15 ,,		2		
		Lucerne	April	Oct.	,,	10 to 15 ,,		2		
		Oat-hay	May	—	,,	10 to 15 ,,		1		
		Barley	July	—	,,	10 to 15 ,,		2		

Robertson ...	Stiff and friable	Wheat	June	Nov.	Kraal	12½ muids		2	£12 10s.	£5
		Maize	Aug.	Jan.	,,	—		2		
		Lucerne	June	—	,,	—		Fortnightly		
		Oat-hay	May	Nov.	,,	17½ ,,		2		
		Barley	,,	,,	,,	20 ,,		3		
Robertson ...	Stiff	Wheat	May	Nov.	Kraal	15 fold	Barley	3	£20	£2 10s.
		Maize	Sept.	April		—		4		
		Lucerne	May	July						
		Root	July	Dec.						
		Oat-hay	April	Oct.		15 ,,		1		
		Barley	May	,,		35 ,,		3		
Zandvliet ...	Friable	Wheat	June	Nov.		7½ muids	Potatoes	1 to 2	£25	£1
		Maize	Sept. to Nov.	March		—		2 ,, 3	to	to
		Lucerne	April ,, Aug.	Sept. to May		6 to 8 cuttings		6 ,, 8	£100	£2
		Oat-hay	May	Oct.		15 muids		1		
		Barley	June	Nov.		7½ ,,		2 to 3		
SOMERSET EAST										
Somerset East ...	Friable	Wheat	March to May	Nov., Dec.	Kraal	15 muids	Lucerne	2	Up-	£1 5s.
		Maize	Nov., Dec,	April	,,	12½ ,,		3	wards	
		Lucerne	March, April	—	,,	500 bundles		3	of	
		Oat-hay	April, May	Nov., Dec.	,,	500 ,,		2	£25	
		Barley	,, ,,	,, ,,	,,	—		2		
Somerset East ...	Stiff and friable	Wheat	May	Dec.	Kraal	7 bushels	Lucerne	3	£10	£1 5s.
		Maize	Nov.	April	,,	15 ,,	and	3		
		Lucerne	April	Oct.	—	—	maize	3		
		Oat-hay	Aug.	Nov.	—	300 bundles		3		
		Barley	May	—	—	300 ,,		3		
STELLENBOSCH										
Stellenbosch ...	Friable	Wheat	May	Nov.	Guano, 100 lbs.	15 muids		None	£240	£200
		Millets	Sept.	Feb.	—	—		Fortnightly		
		Maize	,,	,,	—	—		,,		
		Lucerne	April	Nov. to Mar.	-	—		,,		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
STELLENBOSCH —*Cont.*										
Stellenbosch—*Cont.*	Friable	Root	Aug.	Nov. to Mar.	—	—		Fortnightly		
		Oat-hay	May	Oct.	Guano, 100 lbs.	10,000 lbs.		None		
		Barley	June	Nov.	,, 100 ,,	75 muids		,,		
		Tobacco	July	March	—	—		Fortnightly		
Rustenburg ...	Friable	Wheat	May	Nov.	Phosp., 150 lbs.; guano, 100 lbs.	15 bushels		—	£30	£5
		Millets	Nov.	March		—		2	to	to
		Maize	,,	,,		—		2 to 3	£50	£6
		Lucerne	April	Nov.	—	6 tons		6 ,, 7		
		Root	May	Oct. to April	Farmyard, 5 to 6 tons	5 to 15 tons		2		
		Oat-hay	,,	Nov.	Phosp., 150 lbs.; guano, 100 lbs.	2 tons				
		Barley	April	Oct.		15 bushels				
		Tobacco	May	Dec.	—	—		2		
Helderfontein ...	Stiff and friable	Wheat	April	Nov.	Thomas' phosp., 200 lbs.; kraal, 300 lbs.; sul. of potash, 100 lbs.	32 bushels		—	£40	£40
		Maize	Oct.	—		—		2		
		Lucerne	Sept.	—		—		8 to 10		
		Oat-hay	April	,,		1½ tons				
		Barley	,,	,,						
Stellenbosch ...	Stiff and friable	Wheat	May	Nov.	Phosp., 150 lbs.; guano, 100 lbs.	15 bushels		—	£35	£4
		Millets	Nov.	March		—		2	to	to
		Maize	,,	,,		—		2 to 3	£40	£5

		Lucerne	April	Nov.	—	6 tons		6 „ 7		
		Root	May	Oct. to April	Farmyard, 5 to 6 tons	5 to 15 tons		2		
		Oat-hay	„	Nov.	Phosp., 150 lbs.; guano, 100 lbs.	2 tons				
		Barley	April	Oct.		15 bushels				
		Tobacco	May	Dec.						
Evergreen ...	Stiff and friable	Wheat	May	Nov., Dec.	Guano, 100 to 200 lbs.	10 to 12 bushels		—	—	£15 to £20
		Oat-hay	April, May	Oct., Nov.		30 bushels				
		Barley	May	Nov., Dec.		20 „				
Oude Libertas ...	Stiff and friable	Wheat	June	Nov.	Guano and kraal		Oat-hay	Several	£5 to £100	£2 to £40
		Maize	Sept., Oct.	Jan., Feb.						
		Lucerne	„ „	—				„		
		Oat-hay	May, June	Oct.				None		
		Barley	„ „	—				„		
		Tobacco	April, May	—				Several		
STEYNSBURG										
Ruigtevlei ...	Friable	Wheat	May	Dec.	Kraal, 20 carts	7½ muids	Barley	4	£10	
		Maize	Nov.	March	„ 20 „	10 „		4		
		Root	July	„	„ 20 „	—		5		
		Oat-hay	„	Nov.	„ 20 „	12½ „		6		
		Barley	„	„	„ 20 „	12½ „		5		
Joachemsfontein	Stiff	Wheat	May	Dec.	Dung	20 bags	Potatoes	5		
		Maize	Nov.	April	„	30 „		5		
		Lucerne	March	—	„					
		Root	Nov.	May	„	—		Weekly		
		Oat-hay	July	Nov.	„	15 „		4		
		Barley	May	„	„	25 „		4		

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Natur of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
STEYNSBURG—*Cont.*										
Riverside ...	Stiff an friable	Wheat	May	Dec.	Stable and kraal	30 fold	Lucerne and potatoes	4 to 6	£50	7*s.* 6*d.* to £3
		Millets	Aug.	Jan.	,,					
		Maize	Nov.	Marc	,,	50 ,,		4 ,, 6		
		Lucerne	March	—	,,	—		Occasionally		
		Root	Aug.	Nov.	,,	20 ,,		3 to 4		
		Oat-hay	May	,,	,,	1,500 bdls. to 1 muid		3 ,, 4		
		Barley	,,	,,	,,	sown		3 ,, 4		
Kalkoenkrantz ...	Stiff	Wheat	May	Dec.	Sheep, 30 carts	7½ to 10 muids		5	£5	
		Maize	Nov.	Ap	,, 30 ,,	10 muids		4		
		Lucerne	March	Nov.	,, 30 ,,	—		Fortnightly		
		Root	Oct.	May	,, 30 ,,	—		,,		
		Oat-hay	July, Aug.	Nov., Dec.	,, 30 ,,	10 ,,		Weekly		
		Barley	,, ,,	Dec.	,, 30 ,,	12½ ,,		,,		
		Tobacco	Aug.	March	,, 30 ,,	—		,,		
Hillmoor ...	Stiff and friable	Wheat	April, May	Dec., Jan.	Sheep	5 muids	Potatoes	2 to 3		
		Maize	Oct., Nov.	May	,,	10 ,,		2 ,, 3		
		Lucerne	Feb., March	Dec.	,,	5 tons		2 ,, 6		
		Root	Nov.	May	,,	100 muids		2 ,, 3		
		Oat-hay	July	Dec., Jan.	,,	15 ,,		2 ,, 3		
		Barley	May	,, ,,	,,	20 ,,		2 ,, 3		

Grootvlei ...	Stiff and friable	Wheat	April	Nov.	Sheep, 10 to 12½ tons	25 muids	Oat-hay and lucerne	5	£5
		Maize	Oct.	April, May		25 ,,		4	
		Lucerne	Feb.	—		—		Weekly	
		Root	Nov.	—					
		Oat-hay	July	Nov.		1,000 bundles		4	
		Barley	,,	,,		20 muids		4	
Vanvuuren's Kraal	Friable	Wheat	May	Nov.		5 muids	Maize and barley	5	£7 10s.
		Maize	Dec.	April		5 ,,		4	
		Root	Sept.						
		Oat-hay	April	Oct.		7½ muids		4 to 5	
		Barley	,,	,,		7½ ,,		4 ,, 5	
Varken's Kop ...	Friable	Wheat	April, May	When ripe	Sheep		Lucerne	3	£5 to £10
		Millets	Oct., Nov.	,, ,,	,,			3	
		Maize	,, ,,	,, ,,	,,			3	
		Lucerne	Feb., March	,, ,,	,,			3	
		Root	Aug.	,, ,,	,,			3	
		Oat-hay	April, May	,, ,,	,,			3	
		Barley	,, ,,	,, ,,	,,			3	
Roosterfontein ...	Friable	Wheat	May	Dec.	Sheep, 25 carts	7½ muids		5 to 7	£7 10s.
		Maize	Nov.	March	,, 25 ,,	10 ,,		5 ,, 7	to £12
		Lucerne	March, April	Oct. to May	,, 25 ,,	—		4 ,, 6	
		Root	Nov.	April	,, 25 ,,	—		Fortnightly	
		Oat-hay	July, Aug.	Nov.	,, 25 ,,	10 ,,		,,	
		Barley	,, ,,	,,	,, 25 ,,	12½ ,,		6 to 8	
		Tobacco	Oct.	Feb. to Mar.	,, 25 ,,	—		Weekly	
STOCKENSTROM									
Balfour	Stiff and friable	Wheat	May	Dec.	Cattle, 8 waggons	10 to 12½ muids	Tobacco	2 to 3	£25 to £35
		Oat-hay	April	Oct.	Odam's fertiliser	1,250 bundles		2 ,, 3	£12 10s. to £15
		Tobacco	July	Feb.	Cattle	500lbs.		4	

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
STOCKENSTROM —*Cont.*										
Balfour	Mostly friable	Wheat	May	Dec.	Fertiliser, ¼ ton	4 muids	Tobacco	3	£20	£20
		Millets	Sept.	May	—	—	and	1		
		Maize	Oct., Nov.	June	—	5 ,,	oat-hay	2		
		Lucerne	March	—	—	—		3		
		Oat-hay	May, June	Oct.	—	500 bundles		3		
		Barley	,, ,,	—	—	—		3		
		Tobacco	Oct., Nov.	,,	,, ¼ ,,	600lbs.		3		
Gonzana... ...	Friable	Wheat	March	Dec.			Tobacco	2	£40	£15 to £20
		Maize	Oct.	May				2		
		Lucerne	Spring	Oct.				1 to 2		
		Root	Oct.	June to Sept.				Fortnightly		
		Oat-hay	March	Nov.				2		
		Barley	Jan.	July				2		
		Tobacco	Oct.	Jan.	Kraal			Fortnightly		
Elandsberg ...	Friable	Wheat	April	Nov.	Fertiliser, 250lbs.	5 muids	Oats	5	£5	15*s.*
		Maize	Oct.	March	,, ,,	20 ,,		2		
		Oat-hay	April	Oct.	,, ,,	15 ,,		7		
		Barley	,,	,,	,, ,,	15 ,,		7		
		Tobacco	June	Jan.	Stable, 5 waggons	1,000lbs.		4		

Eyre	Friable	Wheat	April	Dec.	Kraal, 8 tons	5 muids	Tobacco	4	£30	£12 10s
		Maize	Nov.	April	,, 8 ,,	4 ,,		4		
		Root	Sept.	Dec.	,, 8 ,,	40 ,,		2		
		Oat-hay	April	Nov.	,, 8 ,,	600 bundles		4		
		Barley	,,	,,	,, 8 ,,	800 ,,		4		
		Tobacco	Oct.	March	,, 8 ,,	3,000lbs.		12		
Stockenstrom ...	—	Wheat	March	—	—	—	Tobacco	—	£7 10s. to £10	£2 10s. to £5
		Maize	Oct.	May						
		Root	Sept., Oct.							
		Oat-hay	April, May	Nov.						
		Barley	April	,,						
		Tobacco	Oct., Nov.	Jan.						
STUTTERHEIM										
Bolo	Friable	Wheat	May	Jan.	Artificial, 200 to 400lbs., with a little kraal	15 bushels	Maize and potatoes	1 or 2	£5	£3
		Millets	Oct.	May		15 ,,				
		Maize	,,	,,		21 ,,				
		Oat-hay	May	Jan.		18 ,,		1 or 2		
		Barley	June	,,		15 ,,		1 ,, 2		
Bolo	Variable	Wheat	May, June	Nov., Dec.	Cattle and sheep	5 muids	Maize	4		
		Millets	Oct.	April, May		3 ,,		3		
		Maize	Sept.	,, ,,		6 ,,		3		
		Root	Feb.	May, June		1 ton		2		
		Oat-hay	May and June	Nov.		5 muids		4		
		Barley	,, and Feb.	,,		6 ,,		4		
Upper Kubusie ...	Stiff	Wheat	May	Dec.	Sheep, 3 loads	5 muids	Maize and oat-hay	2	£5	£2
		Maize	Sept.	May	,, 3 ,,	8 ,,		2		
		Oat-hay	May	Dec.	,, 3 ,,	12 ,,		2		
		Barley	,,	Sept.	,, 3 ,,	5 ,,		2		

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
STUTTERHEIM —*Cont.*										
Bleakhouse ...	Stiff	Wheat	April	Nov.	Stable and kraal, 3 loads	600lbs.	Oat-hay and maize			
		Millets	Oct.	—						
		Maize	,,	—		1,500lbs.				
		Lucerne	March	—						
		Root	Jan.	—						
		Oat-hay	April	,,		2,000lbs.				
		Barley	,,	,,		1,500lbs.				
Horseshoe ...	Variable	Wheat	May	Dec.	Kraal	20 bushels	Maize	—	£7	£3
		Maize	Sept.	May, June	,,	40 ,,				
		Root	Jan.	—	,,					
		Oat-hay	—	—	,,					
		Barley	—	July, Aug.	,,	30 ,,				
SUTHERLAND										
Sutherland ...	Mostly friable	Wheat	May	Dec.	Farmyard and stable	12½ to 15 fold	Wheat	3	10*s.*	5*s.*
		Maize	Sept.	Feb.		—		Fortnightly		
		Lucerne	,,	April		—		3		
		Root	,,	,,		—		Monthly		
		Oat-hay	July	Nov.		500 to 750 bundles		3		
		Barley	June	Dec.		15 to 17½ fold		3		

Sutherland ...	Mostly friable	Wheat	May, June	Dec.	Stable	12½ to 15 fold	Wheat	—	—	£2
		Maize	Sept.	Feb.	,,					
		Lucerne	,,	April	,,					
		Root	,,	,,	,,					
		Oat-hay	July	Nov.	,,	500 to 750 bundles				
		Barley	June	Dec.	,,	15 to 17½ fold				
Sutherland ...	Stiff and friable	Wheat	May, June	Dec.	Nil	45 to 50 fold	Wheat	3	10s.	
		Maize	Sept.	Feb.	,,	—		Fortnightly		
		Lucerne	Oct.	April	,,	—		,,		
		Root	,,	,,	,,	—		Weekly		
		Oat-hay	July	Nov.	,,	1,200 sheaves per muid		3		
		Barley	June	Dec.	,,	90 fold		3		
Wolvedans ...	Friable	Wheat	May	Nov., Dec.	Nil	20 muids	Wheat	2	10s.	
		Maize	Oct.	Feb.	,,	—		Daily		
		Lucerne	Aug.	Oct.	,,	—		1		
		Root	,,	April	Stable, 75 bags	—		3 a week		
		Oat-hay	July	Oct.	Nil	—		2		
		Barley	May	Nov.	,,	20 ,,		2		
SWELLENDAM										
Grootvadersbosch	Stiff	Wheat	May, June	Dec.	Phosphate of lime mixed with cow dung	8 muids	Tobacco		£7 10s.	£2 10s.
		Maize	Sept.	When ripe		—		3		
		Lucerne	June	,, in flower		—		3		
		Oat-hay	April	Nov.		3,500 lbs.				
		Barley	Oct.	,,		12½ muids				
		Tobacco	,,	When ripe	Cow					
Barrydale ...	Friable	Wheat	May, June	Nov., Dec.	Kraal, 2 waggons	6¼ muids	Wheat and potatoes	2	£7 10s.	10s.
		Maize	Sept., Oct.	March	,, 2 ,,	10 ,,		3 to 4		
		Lucerne	June, July	—	,, 2 ,,					
		Root	Oct. to Jan.	Dec., April	,, 2 ,,	50 ,,		4		
		Oat-hay	April, May	Nov.	,, 2 ,,	3,500 bundles		1		
		Barley	May, June	Nov., Dec.	,, 2 ,,	20 muids		2		

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
SWELLENDAM —*Cont.*										
Tradouw... ...	Friable	Wheat	June	Dec.	Cattle and sheep, 1½ loads	25 fold	Tobacco and potatoes	2	£2 10*s.*	£1
		Maize	Sept.	March				2		
		Oat-hay	May	—				2		
		Barley	,,	Nov.				2		
		Tobacco	Oct.	Feb.	Cattle, 2 loads	—		2		
Lismore	Friable	Wheat	June	Dec.		4 muids	Maize, barley, and tobacco			
		Maize	Oct.	March		12½ ,,		2		
		Oat-hay	May	Nov.		10 ,,				
		Barley	,,	,,		7½ ,,		2		
		Tobacco	Oct.	Jan.						
Rotterdam ...	Friable	Wheat	May	Nov.	Guano and artificial fert., 150lbs.	5 muids	Potatoes	2	£18	£6
		Maize	Oct.	March		7½ ,,		3		
		Lucerne	Sept.	Summer		—		2		
		Oat-hay	March	Oct.		10 ,,		1		
		Barley	April	Nov.		10 ,,		1		
Buffelsjacht ...	Stiff and friable	Wheat	May	Nov.	Farmyard and imported	25 to 30 fold	Potatoes	1	£3 to £315*s.*	£1 5*s.* to £1 10*s.*
		Maize	Nov.	April		30 ,, 40 ,,		1 to 2		
		Oat-hay	April	Oct.		1,000 bund. per muid		2		
		Barley	May	Oct., Nov.		75 fold		1 to 2		
		Tobacco	Oct.	Feb., March		—		None		

Rustenberg ...	Stiff and friable	Wheat	May	Nov.	Superp., ½ bag	20 to 25 fold	Wheat	1	£3 to £5	£1 to £1 10s.
		Millets	Nov.	March	—	50 fold		3		
		Maize	,,	,,	—	50 ,,		3		
		Lucerne	Aug.	—	None	—		2		
		Oat-hay	April	Oct.	Superp., ¼ ,,	20 ,,		1		
		Barley	May	,,	,, ½ ,,	80 ,,		2		
Swellendam ...	Friable	Wheat	May	Nov.		12½ muids	Potatoes	1	£3 to £7 10s.	£1 to £1 10s.
		Maize	Sept.	March		20 ,,		2		
		Lucerne	April	Jan.	Kraal,	1,000 bundles		2		
		Root	July	May	2 to 5	7½ tons		2		
		Oat-hay	April	Oct.	waggons	10 muids		1		
		Barley	May	,,		30 ,,		1		
		Tobacco	,,	Jan.		2,500 lbs.		1		
Klip River ...	Stiff and friable	Wheat	June	Nov.		12½ muids	Potatoes	1	£5 to £15	5s. to 10s.
		Maize	Oct.	March		20 ,,		2		
		Lucerne	April	Jan.	Kraal or	1,250 bundles		1		
		Root	July	May	farmyard,	10 tons		3		
		Oat-hay	April	Oct.	5 to 6 loads	625 bundles				
		Barley	June	Nov.		25 muids		1 to 2		
		Tobacco	May	Jan.		3,000 lbs.		1		
TARKA										
Quaggerkerk ...	Friable	Wheat	April	Dec., Jan.		20 to 40 bushels	Wheat, oat-hay, and potatoes	2	£8	£2
		Maize	,,							
		Lucerne	Feb., March	—		—		3 to 4		
		Root	July	Dec.						
		Oat-hay	May	,,		700 sheaves		2		
		Barley	,,	,,		—		2		
Wheatlands ...	Friable	Wheat	April	Nov.	Sheep and cattle	100 bushels	Wheat	2	£25	£5
		Maize	Oct.	May				2		
		Lucerne	April	Nov. to April				4 to 6		
		Root	Sept. & Feb.	June to Sept.				1 ,, 2		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
TARKA—*Cont.*										
Wheatlands—*Cont.*	Friable	Oat-hay	May	Nov.				2		
		Barley	April	,,				2		
Spitzkop... ...	Friable	Wheat	April	Dec.	Sheep, 4 tons	400 bushels	Wheat	2	£10	£2 10*s.*
		Maize	Sept.	May				2		
		Lucerne	March	Nov.				3 to 4		
		Root	Feb. & Sept.	June				3		
		Oat-hay	May	Nov.				2		
		Barley	April	Oct.				2		
TULBAGH										
Tulbagh	Stiff and friable	Wheat	May	Nov.	Guano, ½ muid	5 muids	Barley	—	—	£3 10*s.*
		Maize	Sept.	Feb.	—	5 ,,				
		Oat-hay	April	Oct.	,, ½ ,,	200 sheaves				
		Barley	,,	,,	,, ½ ,,	17½ muids				
		Tobacco	June							
Plaisant... ...	—	Wheat	May	Dec.				2		
		Millets	Oct.	March				3		
		Lucerne	Sept.	—				4		
		Oat-hay	April	Oct.				4		
		Barley	May	Nov.						
		Tobacco	April	Feb.				5		
La Rhone ...	Stiff and friable	Wheat	May	Oct.	Guano and Superphos., ¼ ton	12½ muids	Oats	—	£5 to £7 10*s.*	£2 10*s.* to £5.
		Oat-hay	April	,,		750 sheaves				
		Barley	,,	,,		37½ muids				

Onverwacht ...	Stiff	Wheat	May	Nov.	—			Nil		
		Maize	Sept.	Feb.	Guano, 300 lbs.			8		
		Oat-hay	April	Oct.	,,			Nil		
		Barley	,,	,,	,,			,,		
		Tobacco	May	Feb.	,,			10		
Klein Berg River	Stiff and friable	Wheat	May	Nov.	Dung, 12 w'g'ns	10 bushels	Oats	—	£3 10s.	£2 10s.
		Maize	Sept.	Feb.	,, 17½ ,,	7½ muids		Weekly		
		Oat-hay	May	Oct.	Phosphate, 2cwt.	6,000 lbs.				
		Barley	,,	,,	Dung, 17½ w'g'ns	7½ muids				
		Tobacco	Sept.	Feb.	,, 25 ,,	1,300 lbs.		,,		
UITENHAGE										
Sand River ...	Stiff and friable	Wheat	May	Nov.	2 waggons, Kraal	7 muids	Potatoes	2	£15	£3
		Maize	Aug.		2 ,, ,,	6 ,,	and	3		
		Root	July		4 ,, ,,	50 ,,	onions	Fortnightly		
		Oat-hay	May		1 ,, ,,	8 ,,		2		
		Barley	April		2 ,, ,,	10 ,,		2		
Sundays River ...	Friable	Maize	Jan. & Aug.	June	Nil	10 to 15 bags	Lucerne,	2	£20 to	10s. to
		Lucerne	April	Sept. to Mar.	,,	¾ ,, 1¼ ton	potatoes	2 to 7	£37 10s.	£1 10s.
		Root	Jan.	June	,,	20 tons	and	2		
		Oat-hay	April, May	Sept.	,,	7½ bags	vege-	2		
		Barley	,, ,,	,,	,,	7½ ,,	tables	2		
		Tobacco	June	Nov.	,,					
Uitenhage ...	Stiff and friable	Wheat	May	Nov.	Kraal or cattle	7 muids	Pota-	—	£20 to	10s. to
		Maize	Aug., Sept.	Feb.	,,	10 ,,	toes,	2	£37 10s.	£1 10s.
		Lucerne	April	—	,,	—	onions,	2 to 7		
		Root	May & July	June	,,	25 ,,	and	2		
		Oat-hay	May	Sept.	,,	7½ ,,	maize	2		
		Barley	April	,,	,,	12½ ,,		2		
		Tobacco	June	Nov.	,,	—		2		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
UITENHAGE—*Cont.*										
Sunnyside ...	Stiff and friable	Wheat	June	Dec.	Cattle	—	Oat-hay and barley	—	—	£1
		Maize	Sept.	Feb.	,,	10 muids				
		Oat-hay	May	Nov.	,,	7½ ,,				
		Barley	March	Oct.	,,	12½ ,,				
UNIONDALE										
Uniondale ...	Friable	Wheat	June	Nov.			Tobacco	3	£5	£1 5*s.*
		Maize	Sept.	April				3		
		Lucerne	Feb.	—				6		
		Root	April	Sept.				Fortnightly		
		Oat-hay	May, June	Nov.				3		
		Barley	May	,,				3		
		Tobacco	April	Jan.				Fortnightly		
Uniondale ...	Stiff and friable	Wheat	April	Dec.	Kraal, ¾ load	12½ muids	Tobacco		£30	£2
		Maize	Oct.	April	,, ¾ ,,	15 ,,		4		
		Lucerne	June	Dec.	,, ½ ,,	4 ,,		5		
		Root	Aug.	March	,, ½ ,,	15,000 lbs.		5		
		Oat-hay	April	Nov.	,, ½ ,,	3,500 ,,		4		
		Barley	,,	,,	,, ¾ ,,	15 muids		4		
		Tobacco	Oct.	March	,, ¾ ,,	500 lbs. leaf		6		

Buffels Klip ...	Friable (?)	Wheat	June	Nov.	½ waggon load goats' dung	7½ muids		2	£2 10s.	£1 10s.
		Maize	Nov.	Jan.		7½ ,,		2		
		Lucerne	Aug.	Dec.		—		3		
		Root	Sept.	Nov.		12½ ,,		3		
		Oat-hay	May	Oct.		500 bundles		2		
		Barley	June	Nov.		7½ muids		2		
		Tobacco	Nov.	Feb.		1,250 lbs.		3		
Dwaas	Friable	Wheat	May	Dec.	Cattle and Sheep, 7½ tons	6 muids	Maize, oats and tobacco	3	£7 10s.	£3 15s.
		Millets	Oct.	April						
		Maize	,,	,,		7½ ,,		3		
		Lucerne	Sept.	,,						
		Root	,,	May						
		Oat-hay	May	Nov.		500 bundles		2		
		Barley	June	,,		10 muids		2		
		Tobacco	Dec.	April		2,500 lbs.		5		
UPINGTON										
Keimoes... ...	Stiff and friable	Wheat	May	Oct. to Dec.			Wheat and maize	5 to 6	£20 to £50	
		Maize	Sept.	,, ,,				5 ,, 6		
		Lucerne	,,	,, ,,				Fortnightly		
		Oat-hay	April	,, ,,				4 to 5		
		Barley	,,	,, ,,				4 ,, 5		
		Tobacco	May & Sept.	,, ,,				Frequent		
VICTORIA EAST										
Lovedale ...	Friable	Wheat	May, June	Dec.	Kraal, 5 to 6 waggons	7 muids	Maize	2	£5 to £6	£1 10s. to £2
		Millets	Sept., Oct.	—						
		Maize	Nov.	May, Oct.		8 ,,		2 to 3		
		Oat-hay	April, May	Nov., Dec.		2,000 bundles		2 ,, 3		
		Barley	July, Aug.	,, ,,		15 muids		2 ,, 3		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
VICTORIA EAST —*Cont.*										
Victoria East ...	Stiff	Wheat	May	Nov., Dec.	—	10 muids	Tobacco	3	£6 to £7 10s.	£2 to £3
		Millets	,,	Nov.	Kraal and stable	—		3		
		Maize	Nov.	May	,,	8 ,,		3		
		Root	Aug. to March	—	,,	—		4		
		Oat-hay	May ,, July	Oct.	,,	1,000 bundles		3		
		Barley	,, ,, Sept.	,,	,,	15 muids		3		
		Tobacco	April	Feb.	,,	1,000 lbs.		Bi-weekly		
VICTORIA WEST										
Victoria West ...	Stiff and friable	Wheat	May	Nov., Dec.	Sheep, 50 carts	12½ to 15 muids	Wheat	5 to 10	£15	£2
		Maize	Oct., Nov.	March	,, 50 ,,	20 ,, 25 ,,		Fortnightly		
		Lucerne	Sept.	Summer	,, 50 ,,	60 ,,		,,		
		Root	,,	Jan. & June	,, 50 ,,	60 ,,		Weekly		
		Oat-hay	April	Oct.	,, 50 ,,	15 ,, 17½ ,,		5 to 8		
		Barley	May	Nov.	,, 50 ,,	15 ,, 20 ,,		5 ,, 8		
WILLOWMORE										
Traka	Stiff	Wheat	April	Nov.	Kraal	10 muids	Oat-hay	4 to 5	£250	
		Millets	Sept.	April	,,			2 ,, 3		
		Lucerne	March	,,	,,			Fortnightly		
		Oat-hay	April	Nov.	,,			4 to 5		
		Barley	,,	,,	,,			4 ,, 5		
		Tobacco	July	Feb.	,,			Fortnightly		
Heuvel Kraal ...	Stiff	Wheat	July	Dec.	Farmyard, 1 ton		Maize			
		Maize	Oct.	April	,, 1 ,,					
		Oat-hay	July	—	,, 1 ,,					

Vogelstruis Laagte	Stiff and friable	Wheat	April	Oct.	Kraal, 1½ waggons	7½ muids	Oat-hay	2	£10 to £25	£2 10s.
		Maize	Oct.	April				3		
		Lucerne	April	Oct.				5		
		Root	Nov.	May				5		
		Oat-hay	March	Sept.				2		
		Barley	,,	,,				2		
Willowmore ...	Stiff	Wheat	April	Oct.	Kraal, 1 ton	7½ to 10 muids	Oat-hay		Varies	£2 10s.
		Maize	Oct.	April	,, 1 ,,					
		Lucerne	March	Oct.	,, 1 ,,					
		Root	Nov.	May	,, 1 ,,					
		Oat-hay	March	Sept.	,, 1 ,,					
		Barley	,,	,,	,, 1 ,,					
WODEHOUSE Prospect... ...	Stiff and friable	Wheat	May & Aug.	Dec., Jan.	Kraal	20 muids	Oats	2	35s.	17s.6d.
		Maize	Oct.	April	,,	7½ ,,		2		
		Lucerne	Feb.	—	,,	—		2		
		Root	Jan.	—	,,	—		2		
		Oat-hay	Sept.	Dec., Jan.	,,	20 ,,		2		
		Barley	,,	,, ,,	,,	20 ,,		2		
Oorlog's Poort ...	Friable	Wheat	July	Dec.	Nil	12½ muids	Potatoes	1		
		Maize	Nov.	May	,,	7½ ,,		1		
		Lucerne	Feb.	Oct. to April	,,	—		Fortnightly		
		Root	Oct., Feb.	Aug.	,,	—		1		
		Oat-hay	Aug.	Jan.	,,	12½ ,,		1		
		Barley	,,	,,	,,	12½ ,,		1		
Middle Court ...	Stiff and friable	Wheat	April	Dec.		20 muids	Potatoes	3		
		Maize	Oct.	April		30 to 35 muids		2		
		Lucerne	Sept.							
		Root	Jan.	June		—		Monthly		
		Oat-hay	July	Dec.		15 muids		3		
		Barley	,,	,,		15 ,,		3		

APPENDIX C—*Continued.*

RETURN giving Particulars of Land in the Various Divisions of the Cape Colony—*Continued.*

DIVISION AND NAME OF FARM.	Nature of Soil.	Crop.	Seasons for		Manures, per acre.	Yield, per acre.	Best Crops.	Irrigation wettings, per season.	Land Values, per acre, Farmers' Estimates.	
			Sowing.	Reaping.					Irrigated.	Unirrigated.
WODEHOUSE—*Cont.*										
Carnarvon Farm	Friable	Wheat	April	Dec.	Kraal, and Fison's fertiliser	40 bushels	Potatoes	3	Rental of 20*s.* on share principle	Rental of 5*s.* on share principle
		Millets	Oct.	July		80 ,,				
		Maize	,,	,,		75 ,,				
		Lucerne	Dec.	—		—		Weekly		
		Root	Nov.	June		1 to 10 tons		2		
		Oat-hay	April	Dec.		700 bundles		2		
		Barley	,,	,,		60 bushels		2		
Dordrecht ...	Stiff and friable	Wheat	April	Dec.	Kraal, 1 muid	20 muids	Potatoes and oat-hay	—	About £2 10*s.*	About £1 10*s.*
		Millets	Oct.	July	,, 1 ,,	40 ,,				
		Maize	,,	,,	,, 1 ,,	37½ ,,				
		Lucerne	Dec.	—	,, 1 ,,					
		Root	Nov.	June	,, 1 ,,	10 tons				
		Oat-hay	June	Dec.	,, 1 ,,	20 muids				
		Barley	July	,,	,, 1 ,,	20 ,,				
WORCESTER										
Vendulie Kraal...	Stiff and friable	Wheat	May	Nov.	Farm, 50 carts	20 muids	Oat-hay	2	£6 to £50	10*s.*
		Maize	Dec.	May	,, 50 ,,	30 ,,		1		
		Lucerne	Aug.							
		Oat-hay	April	Oct.	—	600 bundles		2		
		Barley	May	Nov.	,, 50 ,,	50 muids		2		

Glen Heatlie ...	Stiff and friable	Wheat	May	When ripe	Phosph., 300 lbs.	20 to 30 muids	Potatoes	2 to 3		
		Maize	Dec.	,, ,,	Farm & basic slag, 400 lbs.	40 45 ,,		3 ,, 4		
		Lucerne	July, Aug.	,, ,,	Nil	—		6 ,, 9		
		Root	Aug. & Jan.	,, ,,	Farm & phosph.	400 ,, 500 ,,		3 ,, 6		
		Oat-hay	May, June	,, ,,	Basic slag, 600 lbs.	1,500 o 2,000 bundles		2 ,, 3		
		Barley	,, ,,	,, ,,	,, ,, & phos.	50 to 60 muids		2 ,, 3		
Glen Cole ...	Stiff and friable	Wheat	June	Nov.	Thomas's phosphate, 250 lbs.	15 muids	Potatoes	2	£12 10*s.*	£1 10*s.*
		Maize	Nov., Dec.	May		17½ ,,		2		
		Lucerne	April	April		500 lbs.		3		
		Root	Dec.	March		100 muids		3 to 5		
		Oat-hay	May	Oct.		500 bundles		2		
		Barley	,,	Nov.		37½ muids		2 to 3		
Ouderklopper's Bosch	Friable	Wheat	May	Oct.	Kraal, 4 tons	25 muids	Barley	2	£15	
		Maize	Dec.			—		2		
		Lucerne	April			—		3		
		Oat-hay	May			1,000 sheaves		1		
		Barley	,,			37½ muids		2		
F. C. over Hex (?)	Stiff and friable	Wheat	May	Nov.	Fertiliser and guano, 125 lbs. to 150 lbs.	5 muids	Barley	2	£2 10*s.* to £5	7*s.* 6*d.* to £1
		Maize	Oct.	March		5 ,,		2		
		Lucerne	May, June	Oct.		—		6		
		Oat-hay	May	,,		7½ ,,		1		
		Barley	,,	Nov.		10 to 12½ muids		2		
Philipsdale	Stiff and friable	Wheat	June	Nov.		20 muids	Barley and oats.	1 to 2	£5 to £20	£3 to £10
		Maize	Nov.	Feb.		35 ,,		3		
		Lucerne	April	—		20 tons		Fortnightly	(?)	(?)
		Oat-hay	May	Oct.		15 muids		1		
		Barley	,,	Nov.		27½ ,,		3		
Jan de Boer ...	Friable	Wheat	April to May	Dec	Nil	15½ muids	Wheat	—	—	£2 10*s.*
		Oat-hay	,, ,, ,,	,,	,,	22½ ,,				

(D.)

WAGES AND RENT.

SHOWING the AVERAGE RATES of WAGES paid for different Classes of Labour at certain localities, distinguishing between Monthly and Daily Rates paid to European and Native Workmen; and the Average Monthly Rental of a Labourer's Hut with Garden, and of a Town Lodging for a Mechanic's Family.

NATURE OF SERVICE.	Whether daily or monthly rate.	Whether European or Col'd Workmen.	Aliwal North.	Beaufort West. (1899.)	Caledon.	Colesberg.	Cradock.	Fort Beaufort.	Malmesbury.	Mossel Bay.	Oudtshoorn.	Paarl.	Somerset East.	Uitenhage.	Kokstad. (East Griqualand.)	Umtata. (Tembuland.)
WAGES—			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
FARM SERVICE—with Board and Lodging—																
Overseers, Head Shepherds, &c.	p.m.	E.	—	70 0	60 0	60 0	80 0	80 0	50 0	—	40 0	60 0	30 0	90 0	100 0	—
	—	C.	—	—	40 0	—	40 0	40 0	—	30 0	20 0	—	20 0	60 0	30 0	10 0
Servants and Herds ...	—	E.	—	—	40 0	—	30 0	—	—	20 0	30 0	—	15 0	—	—	—
	—	C.	—	15 0	40 0	—	10 0	15 0	20 0	10 0	15 0	15 0	10 0	15 0	10 0	5 0
Day Labourers—with food	p.d.	E.	—	2 6	1 6	—	3 0	3 6	2 6	2 0	0 9	3 0	2 6	3 0	—	4 0
	—	C.	—	1 6	1 6	—	1 0	1 6	1 0	1 6	0 6	1 6	2 0	2 0	1 0	1 6
Do. without food	—	E.	—	4 0	2 6	—	4 0	6 0	3 6	3 0	3 6	3 6	3 6	5 0	—	—
	—	C.	1 6	2 6	2 6	—	1 6	2 6	2 0	2 6	2 6	2 6	2 6	3 0	2 0	3 0

DOMESTIC SERVANTS—with Board or Lodging—																						
Males	p.m.	E.	—	—	—	—	—	60 0	—	30 0	40 0	—	40 0	60 0	—	100 0						
	—	C.	—	25 0	30 0	—	10 0	15 0	25 0	20 0	20 0	10 0	10 0	45 0	—	20 0						
Females	—	E.	—	20 0	—	—	20 0	30 0	—	20 0	30 0	—	20 0	35 0	—	30 0						
	—	C.	—	15 0	15 0	—	6 0	10 0	15 0	15 0	15 0	6 0	10 0	20 0	15 0	15 0						
TRADESMEN—without food—																						
Bookbinders	p.d.	E.	—	6 0	—	—	7 6	—	—	8 0	—	7 0	7 6	6 9	10 0	—						
Brickmakers	—	E.	—	—	—	—	3 0	—	—	4 0	7 6	—	—	4 6	—	8 0						
Carpenters and Joiners...	—	E.	15 0	10 3	5 0	—	14 0	12 6	12 6	18 0	10 0	8 0	8 0	10 9	15 0	12 6						
Masons and Bricklayers	—	E.	15 0	10 3	5 0	—	13 0	14 0	12 0	12 0	9 6	8 0	8 0	10 9	15 0	12 6						
Painters	—	E.	—	10 3	5 0	—	10 0	10 0	8 0	10 0	10 0	7 6	8 0	7 9	15 0	12 6						
Printers	—	E.	—	6 0	—	—	7 6	10 0	—	8 0	10 0	7 6	7 6	7 9	20 0	8 0						
Saddlers	—	E.	—	—	5 0	—	7 6	10 0	—	5 0	7 6	9 0	8 0	7 0	15 0	10 0						
Sawyers	—	E.	15 0	—	—	—	—	7 6	—	7 6	—	—	5 0	—	12 0	7 0						
Stonecutters	—	E.	—	12 9	—	—	10 0	14 0	—	12 0	7 6	10 0	12 0	—	18 0	12 6						
Tailors and Shoemakers	—	E.	—	10 0	5 0	—	7 6	8 0	10 0	6 0	8 0	6 0	7 6	6 9	12 0	8 0						
Tanners	—	E.	—	—	—	—	—	—	—	5 0	—	9 0	7 6	—	—	—						
Tinsmiths	—	E.	—	10 0	—	—	7 6	—	5 6	8 0	7 6	6 0	7 6	7 0	12 0	12 6						
Waggonmakers and Blacksmiths	—	E.	—	10 0	5 0	—	10 0	12 6	8 6	10 0	10 0	8 0	12 0	10 0	15 0	12 6						
RENT—																						
Labourer's Cottage ...	p.m.	—	20 0	10 0	20 0	40 0	80 0	40 0	30 0	30 0	40 0	25 0	40 0	30 0	15 0	40 0						
Town Lodging	—	—	50 0	70 0	30 0	50 0	100 0	80 0	50 0	40 0	70 0	50 0	80 0	75 0	60 0	90 0						

WAGES AND RENT—*Continued.*

NATURE OF SERVICE.	Whether daily or monthly rate.	Whether European or Col'd Workmen.	Albany. (Graham's Town.)	Cape Town.	East London.	Graaff Reinet.	Kimberley.	Port Elizabeth.	Queen's Town.	Worcester.
			s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
WAGES—										
Day Labourers—with food	p.d.	E.	1 0	3 0	2 6	2 6	—	3 0	3 6	2 0
	—	C.	0 6	2 3	1 6	1 6	—	2 0	1 0	2 0
Do. without food	—	E.	2 0	4 0	5 0	3 6	—	5 0	4 0	3 0
	—	C.	1 0	3 6	2 6	2 6	—	3 6	2 0	3 0
Domestic Servants—with Board and Lodging—										
Males	p.m.	E.	80 0	90 0	100 0	30 0	—	100 0	40 0	80 0
	—	C.	20 0	60 0	40 0	20 0	—	40 0	20 0	30 0
Females	—	E.	50 0	65 0	50 0	20 0	—	40 0	35 0	20 0
	—	C.	15 0	30 0	30 0	15 0	—	25 0	12 0	15 0
Tradesmen—without food—										
Bookbinders	p.d.	E.	8 0	8 6	—	5 0	12 6	8 6	5 0	—
Brickmakers	—	E.	—	4 0	—	4 0	—	10 0	4 0	3 6
Carpenters and Joiners	—	E.	11 0	11 6	14 0	10 0	12 6	10 0	12 0	8 0
Masons and Bricklayers	—	E.	12 0	11 6	14 0	10 0	12 6	10 0	13 0	8 0
Painters...	—	E.	10 0	9 0	10 0	7 6	12 6	10 0	7 6	7 0
Printers...	—	E.	7 6	8 6	9 0	7 6	12 6	10 0	6 6	—
Saddlers...	—	E.	8 6	7 6	—	6 0	10 0	10 6	11 0	6 0
Sawyers...	—	E.	15 0	10 0	—	—	--	11 6	6 0	6 0
Stonecutters	—	E.	12 6	13 0	15 0	10 0	12 6	12 0	15 0	10 0
Tailors and Shoemakers	—	E.	7 6	7 6	12 0	5 0	—	9 0	9 0	6 0
Tanners...	—	E.	9 0	6 0	—	—	—	10 0	—	6 0
Tinsmiths	—	E.	10 0	12 0	10 6	4 0	7 6	11 0	7 6	6 0
Waggonmakers and Blacksmiths	—	E.	10 0	10 0	13 6	10 0	12 6	12 6	13 0	9 0
RENT—										
Town Lodging	p.m.	—	60 0	50 0	110 0	70 0	100 0	60 0	50 0	50 0

(E.)

PRICES OF PROVISIONS.

SHOWING the AVERAGE MARKET PRICES of PROVISIONS in certain Localities.

ARTICLES.	Albany.	Aliwal North.	Beaufort West.	Caledon.	Cape.	Cradock.	East London.	Graaff Reinet.	Kimberley.	King William's Town.	Malmesbury.	Port Elizabeth.	Queen's Town.	Mount Currie. (East Griqualand.)	Umtata.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Oatmeal ... ... per lb.	3½	6	6	4	2½	4	3¼	6	5	3½	2½	3½	6	6	6
Flour ... ... ,,	2½	3	3	3	2½	2½	3	3	4	3½	2½	2	3	3	3
Bread ... ... ,,	2½	3	—	1½	2½	4	5	2	6	2¼	2	2½	3	3	3
Mutton ... ... ,,	10	9	7	8	6½	11	1 0	8	9	9½	8	1 0	8	10	10
Beef ... ... ,,	10	8	—	8	8	11	1 0	8	10	8	8	1 0	8	9	10
Pork ... ... ,,	1 0	10	—	9	8	1 0	1 0	8	1 0	10	10	1 0	9	6	9
Bacon ... ... ,,	1 1	10	1 3	1 2	1 2	1 3	1 4	10	1 3	1 0	1 5	1 1	1 3	8	10
Butter, fresh ... ,,	3 0	2 1	2 0	1 6	2 0	3 0	3 0	2 0	2 3	4 0	1 6	2 9	2 6	1 8	3 6
Do. salt ... ... ,,	1 6	2 0	1 8	1 0	1 6	2 0	—	1 9	2 0	2 0	1 3	2 6	1 6	1 5	2 6
Cheese ... ... ,,	1 3	1 6	1 5	1 2	1 3	1 3	1 3	1 0	1 6	1 2	1 3	1 3	1 4	1 6	1 6
Tea ... ... ,,	1 6	2 6	2 0	1 6	2 0	2 3	3 0	2 0	2 0	2 6	2 0	2 2	1 6	1 9	2 0
Coffee, raw ... ... ,,	7	9	8	6	8	7	1 0	8	9	9	7	1 0	9	9	9
Sugar ... ... ,,	3	4	3½	3	3	3½	6	3	4	3½	2½	3½	4	4	4
Rice ... ... ,,	2½	3	3	2	2	3	4	3	3	2½	2½	4½	3	3	3
Tobacco, Colonial ... ,,	1 0	1 6	11	1 0	1 3	1 0	1 6	1 0	9	9	2 0	2 6	1 6	2 0	2 0
Dried Frult ... ,,	6	6	6	6	7	6	7	6	—	6	6	11	6	1 0	9
Salt ... ... per bushel	—	—	—	5 0	2 0	3 0	3 6	—	—	4 6	2 6	—	—	6 0	6 0
Wine... ... per gal.	8 6	9 0	—	3 0	2 3	9 0	3 6	12 0	6 0	—	5 6	6 6	7 6	18 6	10 0
Brandy ... ... ,,	12 0	12 0	—	6 0	11 0	10 0	4 9	12 0	8 0	—	9 6	10 0	10 0	18 6	15 0
Beer, English per bot.	1 6	1 6	—	1 6	1 6	1 6	1 3	2 0	1 6	1 6	1 6	1 6	2 0	2 6	2 0
Do. Colonial ,,	1 0	—	—	4	4	1 0	1 0	1 0	1 0	8	4	1 0	1 0	9	—
Milk ... ... ,,	4	6	—	3	4	8	6	4	5	4	3	6	4	3	4
Condensed Milk ... per tin	6½	9	—	8	6	8	11	7	7	7	7	6	7	9	9
Candles ... ... per lb.	8	9	—	9	8	8	1 0	9	10	9	8	8	9	9	10
Lamp Oil ... per gal.	2 0	1 9	—	2 0	1 6	1 6	2 6	3 6	2 9	1 6	1 6	2 0	2 6	2 6	2 6

(F.)

PRICES OF CLOTHING.

SHOWING the AVERAGE MARKET PRICES of CLOTHING and BEDDING in certain Localities.

ARTICLES.	Albany.		Aliwal North.		Beaufort West		Caledon.		Cape.		Cradock.		East London.		Graaff Reinet.		Kimberley.		King William's Town.		Malmesbury.		Port Elizabeth.		Queen's Town.		Mount Currie. (East Griqualand.)		Umtata.	
Labourers' Clothing:	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Shirts ... per doz.	15	0	20	0	24	0	30	0	34	0	30	0	24	0	21	0	35	0	18	0	18	0	30	0	24	0	21	0	30	0
Boots ... ... ,, pair	8	6	10	6	7	6	7	6	7	6	10	0	10	6	8	6	10	0	7	6	7	6	18	6	5	6	9	3	10	0
Jackets ... each	10	0	—		—		10	0	8	0	10	0	15	0	10	6	15	0	7	6	18	6	—		15	0	10	6	12	0
Waistcoats ... ... ,,	4	0	—		—		3	6	3	6	6	0	6	0	3	6	5	0	2	6	3	6	—		—		4	6	4	6
Trousers ... per pair	7	6	8	6	—		7	6	6	0	10	0	10	6	6	0	15	0	7	6	5	0	—		10	6	7	6	12	0
Hats ... ... each	3	6	4	6	—		5	0	4	6	7	6	7	6	3	0	7	6	5	6	4	0	8	0	5	0	2	6	2	6
Clothing:																														
Bonnets or Hats, Straw, each	4	6	2	6	2	6	2	6	2	6	2	0	1	6	1	0	2	6	2	6	2	0	3	6	—		2	6	3	0
Boots, Women's per pair	7	6	10	0	5	0	6	0	7	6	10	0	10	6	15	0	10	0	7	6	6	0	15	0	10	6	10	0	10	6
Calico ... ,, yard		5		6		6		6		5		4		9		4		6	—			5		6		$7\frac{1}{2}$		6		6
Coats, Doeskin each	7	6	10	6	10	0	10	0	12	0	—		15	0	10	6	15	6	15	0	25	0	10	6	25	0	10	0	12	6
Flannel ... per yard	1	6	1	6	1	3	1	6	1	2	1	6	3	0	1	6	1	6	2	3	1	3	1	3	1	6	1	6	1	6
Handkerchiefs ... each		6		3		3		4		6		6		6		6		6		6		5		6		6		6		6
Print ... ... per yard		6		6		6		4		6		6		6		3	—			6		$5\frac{1}{2}$		7		6		6		6
Shawls ... ... each	8	6	10	6	15	6	7	6	5	6	10	0	15	0	8	0	17	6	10	0	12	0	15	0	15	6	15	0	18	6
Sheeting ... per yard	1	6	1	9	—		1	6	1	3	1	6	3	0	1	6	1	6	1	9	1	6	1	6	2	0	2	0	1	9
Shirts, Flannel each	8	6	4	6	5	6	7	6	6	6	7	6	10	6	5	6	5	0	7	6	5	6	7	6	10	6	7	6	8	6
Socks ... ... per pair	1	0	1	0	1	0	1	6	1	0	1	0	1	3		9	1	3	1	0	1	3	1	3	1	0	1	0	1	6
Bedding:																														
Blankets ... per pair	13	6	10	6	—		10	0	20	0	12	6	30	0	11	6	12	6	30	0	9	0	25	0	32	6	20	0	30	0
Counterpanes ... each	7	6	3	6	—		5	0	5	6	5	0	7	6	7	6	10	0	10	0	5	0	5	6	7	6	6	6	7	6
Mattresses ... ... ,,	17	6	17	6	—		15	0	15	6	15	0	30	0	20	0	15	0	20	0	15	0	15	0	25	0	20	0	18	0

(G.)

PRICES OF STOCK AND ANIMAL PRODUCTIONS.

SHOWING the AVERAGE MARKET PRICES of STOCK and ANIMAL PRODUCTIONS in certain Localities.

ARTICLES.	Albany.	Aliwal North.	Beaufort West.	Caledon.	Cape.	Cradock.	East London.	Graaff Reinet.	Kimberley.	King William's Town.	Malmesbury.	Port Elizabeth.	Queen's Town.	Mount Currie. (East Griqualand.)	Umtata.
Stock:	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Saddle horses...per head	20 0	12 10	15 0	30 0	25 0	30 0	25 0	20 0	15 0	15 0	32 0	15 0	20 0	25 0	15 0
Draught ,, ... ,,	18 0	15 0	15 0	30 0	20 0	25 0	25 0	25 0	15 0	20 0	32 0	20 0	36 0	20 0	15 0
Mules ... ... ,,	25 0	—	12 0	25 0	20 0	25 0	25 0	18 0	22 0	17 0	30 0	20 0	12 10	15 0	26 0
Asses ... ... ,,	8 0	—	6 0	7 10	7 10	10 0	5 0	7 10	5 0	6 0	10 0	5 10	5 0	10 0	10 0
Draught oxen... ,,	16 0	12 10	15 0	12 0	11 0	17 0	18 0	10 0	15 0	17 0	15 0	12 10	13 0	16 0	16 0
Milch cows ... ,,	15 0	15 0	10 0	20 0	17 0	15 0	30 0	12 0	15 0	12 10	18 0	20 0	15 0	18 0	15 0
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Woolled sheep.. ,,	25 0	22 6	22 6	20 0	25 0	20 0	25 0	20 0	22 0	25 0	23 0	23 0	18 0	15 0	22 6
Cape sheep ... ,,	22 6	—	22 6	25 0	25 0	20 0	22 6	20 0	20 0	25 0	24 0	23 0	12 6	12 0	25 0
Swine ... ... ,,	60 0	25 0	156 0	100 0	90 0	100 0	100 0	60 0	60 0	30 0	60 0	70 0	30 0	30 0	40 0
Goats ... ... ,,	20 0	20 0	25 6	30 0	27 6	18 0	20 0	17 6	22 0	20 0	30 0	23 0	16 0	10 0	12 6
Fowls ... ... per pair	7 0	4 0	5 0	6 0	6 0	6 0	6 0	5 0	6 0	4 6	5 0	7 0	—	5 0	5 0
Ducks ... ... ,,	8 0	4 0	5 0	6 0	6 6	6 0	7 6	6 0	9 0	6 0	6 0	8 0	—	7 6	6 0
Animal Productions:															
Washed wool ... per lb.	1 0	—	—	7½	—	—	6	—	—	4¾	—	11½	5	—	5
Unwashed ... ,,	6	3½	3½	4½	6	8	4½	4½	—	3¾	4	4	3¾	5	3½
Butter ... ... ,,	2 6	2 0	1 8	1 4	1 5	2 6	2 6	—	1 9	—	1 0	2 0	1 9	1 3	2 6
Fat and tallow... ,,	9	6	—	9	1 0	1 0	6	6	—	—	9	8	4	—	9
Soap ... ... ,,	4	6	—	4	3	6	6	5	4	3½	4	3	4	—	6
Hides ... ... each.	—	—	—	—	15 0	20 0	19 0	20 0	13 6	15 0	27 6	11 0	—	7 0	—
Sheep skins ... ,,	—	1 6	—	—	2 3	2 0	2 6	1 6	1 3	1 7	2 3	1 6	—	1 0	—
Goat skins ... ,,	—	2 4	—	1 3	3 0	2 6	3 6	1 0	1 6	1 3	4 0	2 0	—	1 6	—

(H.)

PRICES OF AGRICULTURAL PRODUCE.

SHOWING the AVERAGE MARKET PRICES of AGRICULTURAL PRODUCE in certain Localities, and SUMMARY for Colony for Four Years.

DISTRICT.	AGRICULTURAL PRODUCE.																	
	Wheat, per bushel.		Barley do.		Rye do.		Oats do.		Mealies do.		Peas, Beans do.		Potatoes do.		Wine, better quality, per leaguer.		Wine, ordinary, do.		Brandy, better quality, do.		Brandy, ordinary, do.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	£	*s.*		*s.*	£	*s.*	£	*s.*
Albany, 100 lbs.	12	0	11	3	10	6	14	0	11	6	18	0	21	0	—		—		—		—	
Beaufort West	7	0	6	6	8	0	5	6	7	6	18	6	9	0	—		—		—		—	
Caledon	6	0	5	0	6	0	4	0	5	0	10	0	7	0	—		—		—		—	
Cape	7	0	5	3	6	6	4	0	5	6	8	0	5	6	11	0	9	0	35	0	29	0
Ceres	6	8	4	0	5	6	5	0	5	0	13	0	4	0	10	0	8	0	40	0	35	0
Clanwilliam	7	6	5	0	6	0	5	0	5	0	10	0	6	0	30	0	15	0	30	0	15	0
Colesberg	8	6	6	0	7	0	5	0	7	6	—		6	0	—		—		—		—	
Cradock	10	0	8	0	8	0	6	0	10	0	8	0	8	0	—		—		—		—	
East London	7	0	4	0	—		2	6	4	6	10	6	9	0	—		—		—		—	
Fort Beaufort	10	0	8	0	—		12	0	10	0	12	6	10	0	—		—		—		—	
George	5	0	4	0	—		5	0	4	0	7	0	5	0	—		—		—		—	
Graaff Reinet	8	0	9	6	8	0	10	0	8	6	10	0	10	0	20	0	16	0	60	0	50	0
Humansdorp	8	0	5	0	—		8	6	8	0	—		6	0	—		—		—		—	
Kimberley, bag	26	0	16	0	—		19	0	26	0	47	6	20	0	—		—		—		—	
King William's Town, 100 lbs.... ...	11	0	12	0	—		22	0	14	0	12	6	17	6	—		—		—		—	
Knysna	7	6	4	0	6	0	5	0	6	0	10	0	5	0	—		—		—		—	

Ladismith	8	0	4	0	7	0	4	0	10	0	6	0	10	0	10	0	8	0	35	0	30	0
Malmesbury	7	6	5	0	6	0	4	0	8	0	10	0	7	0	12	0	9	0	40	0	30	0
Middelburg	6	0	6	0	6	0	8	0	7	0	10	0	8	0	—		—		—		—	
Mossel Bay	6	8	2	8	4	0	5	0	6	0	10	0	4	0	—		—		—		—	
Oudtshoorn	7	6	3	6	4	0	6	6	6	6	10	0	4	6	—		—		16	0	42	0
Paarl	6	0	5	6	6	0	4	0	5	0	6	0	6	0	10	0	8	0	30	0	20	0
Philipstown	10	0	7	0	—		7	0	8	0	—		7	0	—		—		—		—	
Piquetberg...	6	8	5	0	6	8	4	0	6	0	10	0	6	0	—		—		—		—	
Port Elizabeth, 100 lbs.	—		10	0	—		—		12	0	14	0	20	0	—		—		—		—	
Prince Albert	8	4	7	0	8	0	7	0	7	0	10	0	8	0	24	0	18	0	40	0	30	0
Queen's Town, 100 lbs.	10	6	8	6	—		15	0	10	0	18	6	10	0	—		—		—		—	
Richmond	10	0	8	0	8	0	9	0	9	6	4	0	—		—		—		—		—	
Robertson	8	0	4	0	7	6	4	0	7	6	15	0	5	0	16	0	10	0	40	0	25	0
Somerset East	10	0	10	0	10	0	10	0	10	0	16	0	16	0	—		—		—		—	
Stellenbosch	7	6	5	0	6	6	4	6	6	0	8	0	6	0	12	0	9	0	40	0	35	0
Swellendam	7	0	4	0	5	6	5	0	6	0	12	0	4	0	16	0	12	10	45	0	35	0
Tulbagh	8	0	5	0	—		7	0	10	0	7	0	15	0	9	0	7	0	40	0	30	0
Uitenhage, 100 lbs.	11	0	10	0	—		11	0	13	6	21	0	17	6	—		—		—		—	
Worcester	6	6	4	0	6	0	4	0	6	0	12	6	6	0	10	0	8	0	20	0	16	0
Average for Colony, 1897	9	$3\frac{1}{2}$	5	$4\frac{1}{4}$	6	$6\frac{1}{2}$	6	$4\frac{1}{4}$	6	0	10	$1\frac{1}{2}$	6	$5\frac{1}{2}$	12	0	8	10	26	14	21	2
Colony Proper ,, ...	9	2	5	3	6	7	6	0	6	7	10	3	6	3	—		—		—		—	
Transkei ,, ...	9	8	6	9	5	0	7	$11\frac{1}{2}$	4	$0\frac{1}{4}$	9	$6\frac{1}{2}$	7	$0\frac{3}{4}$	—		—		—		—	
Colony Proper, excluding Bechuanaland, 1898	9	$5\frac{1}{4}$	5	$2\frac{1}{4}$	6	$8\frac{1}{4}$	6	1	7	$4\frac{1}{2}$	10	$6\frac{1}{2}$	7	$3\frac{1}{4}$	13	0	8	18	24	10	19	17
Transkei only, 1898	10	$3\frac{1}{2}$	7	$1\frac{1}{2}$	—		8	$11\frac{1}{4}$	7	$3\frac{3}{4}$	11	$9\frac{1}{4}$	7	$11\frac{3}{4}$	—		—		—		—	
Colony Proper, excluding Bechuanaland, 1899	8	0	5	2	6	6	5	9	6	10	11	1	6	0	10	8	7	19	22	9	18	8
Transkei only, 1899	9	2	4	10	—		7	8	5	0	9	1	6	5	—		—		—		—	
Colony Proper, excluding Bechuanaland, 1900	7	11	5	10	6	7	6	2	7	8	11	3	7	9	16	12	11	6	38	18	32	7
Transkei only, 1900	15	4	9	3	—		10	5	9	4	11	9	10	6	—		—		—		—	

(I.)

RAINFALL.

Rainfall during each of the last Seven Years at Fifty-eight typical Observing Stations.

Station.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
CAPE PENINSULA	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Bishop's Court ...	57·09	44·77	42·73	72·88	59·73	43·95	56·62
Royal Observatory ...	28·51	21·73	21·78	28·80	26·80	21·25	25·68
Sea Point	21·48	—	19·25	—	—	—	23·82
Simon's Town ...	24·47	23·57	26·51	40·71	38·45	33·38	29·35
Table Mountain ...	69·90	59·58	75·78	74·81	84·02	65·78	72·67
SOUTH-WEST							
Ceres	57·50	23·94	36·06	42·52	44·60	41·98	42·23
Montagu	6·64	9·80	9·70	10·96	7·66	15·98	18·86
Stellenbosch	24·30	19·80	26·89	35·41	32·33	23·09	28·59
Wellington	27·67	17·19	27·34	32·84	30·97	24·47	27·29
Worcester	11·77	6·88	7·05	12·05	14·09	12·22	13·67
WEST COAST							
Clanwilliam	8·39	4·29	6·18	8·93	10·39	11·88	—
Malmesbury	19·09	10·87	16·46	22·36	20·09	17·94	—
Port Nolloth	0·45	3·21	0·87	3·11	5·27	5·35	2·34
Springbok	4·26	5·19	7·13	9·74	13·11	11·96	9·60
SOUTH COAST							
George	24·86	33·40	29·86	27·32	24·44	30·36	38·66
Humansdorp	22·68	26·37	30·54	19·90	16·72	22·24	26·07
Mossel Bay	13·00	16·87	13·98	13·45	13·14	21·61	18·10
Port Elizabeth ...	16·88	17·08	24·23	22·28	10·41	17·50	20·38
Riversdale	10·42	—	9·66	10·74	10·54	18·41	19·07
Storms River	37·87	43·81	47·01	39·04	33·23	31·98	47·74
Swellendam	29·25	31·12	27·54	26·36	21·32	42·31	35·89
Uitenhage	12·68	18·99	19·93	14·23	10·27	16·36	18·34
SOUTHERN KARROO							
Oudtshoorn	8·31	8·47	8·14	5·19	6·21	9·00	12·10
Touws River	—	—	7·27	10·24	—	11.68	9·04
Uniondale	12·15	13·04	11·76	11·78	7·99	12·47	12·91
WEST CENTRAL KARROO							
Beaufort West ...	9·26	8·89	6·12	5·70	6·64	10·85	9·83
Fraserburg Road ...	7·20	—	1·50	—	5·82	7·77	6·98
Prince Albert	8·98	8·53	6·55	2·27	4·10	9·89	7·68
Willowmore	7·53	11·23	7·96	9·70	6·72	11·97	7·48
EAST CENTRAL KARROO							
Aberdeen	11·94	11·82	11·37	9·89	8·46	14·97	13·13
Graaff Reinet	12·35	13·87	12·61	13·51	9·08	16·41	15·50
Somerset East ...	22·54	26·90	21·92	25·21	18·71	25·13	27·68

RAINFALL—*Continued.*

Station.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
NORTHERN KARROO	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Calvinia	6·63	5·80	5·71	8·63	13·27	8·50	—
Carnarvon	7·08	7·26	2·24	6·31	9·70	11·48	11·67
Colesberg	19·19	13·40	12·34	21·10	—	13·15	21·23
Cradock	14·53	14·77	9·78	15·38	15·01	14·32	14·43
Fraserburg	7·42	6·66	4·22	5·35	7·08	9·47	—
Murraysburg	10·29	8·69	7·57	8·01	8·30	12·43	—
Richmond	17·41	—	6·30	13·80	15·10	18·95	—
Tarkastad	20·85	22·30	11·07	22·36	16·93	15·57	18·34
Victoria West... ...	9·45	9·87	3·86	10·13	12·21	16·41	13·81
NORTHERN BORDER							
Hopetown	16·74	13·10	10·72	14·62	16·16	13·87	13·44
Kenhardt	6·70	—	1·39	5·60	7·07	9·38	—
Kimberley	15·76	18·54	2·76	17·74	17·90	16·38	21·67
Pella	1·20	—	2·60	2·41	9·34	4·98	1·27
Prieska...	11·63	—	4·63	10·78	13·48	7·55	—
Van Wyk's Vlei ...	5·18	5·47	11·51	4·19	8·20	10·97	—
SOUTH-EAST							
Cathcart	24·87	28·40	16·38	31·94	21·36	25·49	27·88
East London (East) ...	30·84	40·70	37·95	29·09	24·25	25·32	28·67
Fort Beaufort... ...	20·08	—	17·21	17·54	17·58	17·95	17·30
Grahamstown ...	28·41	27·70	27·54	24·14	19·58	24·26	26·26
King William's Town	23·10	26·75	17·71	22·31	15·79	18·77	22·36
Lovedale	20·26	—	21·00	21·45	16·86	15·56	—
NORTH-EAST							
Aliwal North	29·26	22·33	11·04	25·78	26·89	22·44	20·49
Burghersdorp	18·15	20·63	11·70	21·60	21·38	22·61	22·19
Jamestown	20·45	22·67	11·62	24·42	—	—	19·14
Tylden	—	26·31	7·41	24·82	11·21	13·77	24·09
Queen's Town... ...	17·61	—	12·27	27·00	20·10	15·94	25·03

(J.)

TOTAL RAINFALL FOR 1901.

	Inches.
I. CAPE PENINSULA—	
Bishop's Court	56·62
Blaauwberg Strand	14·56
Camp's Bay	23·80
Cape Point	11·72
Cape Town, Fire Station	27·41
,, South African College	33·51
,, Sea Point (Hall)	23·82
,, Molteno Reservoir	35·24
,, Platteklip	47·44
,, Signal Hill	20·94
Claremont	41·06
Devil's Peak, Block House	60·54
,, Nursery Gauge	52·65
,, Lower Gauge	44·36
Durbanville	24·43
Fish Hoek	22·32
Groot Constantia	44·66
Kenilworth	48·07
Robben Island	17·02
Royal Observatory	25·68
Strandfontein	19·88
Simon's Town (Wood)	30·96
,, (Gaol)	29·35
Tokai	35·49
Wynberg (St. Mary's)	41·14
II. SOUTH-WEST—	
Caledon	23·31
Ceres	42·23
Ceres Road	19·99
Danger Point	20·60
De Doorns	13·53
De Hoop (Div. Robertson)	17·42
Groot Drakenstein	33·01
Hex River	17·29
Klapmuts	27·69
Kluitjes Kraal	28·20
Lady Grey (Div. Robertson)	11·80
Montagu	18·86
Paarl	33·07
Rawsonville	26·41
Robertson	16·54
,, (Govt. Plantation)	13·72
Rocklands	22·12
Somerset West	25·81
Stellenbosch (Gaol)	28·59
Tulbagh	19·87
Wellington (Gaol)	27·29
Weltevreden (Div. Caledon)	29·15
Worcester (Gaol	13·67
III. WEST COAST—	
Anenous	4·92
Concordia	42·49
Dassen Island	19·20
Hopefield	14·41

III. WEST COAST—*Continued.*	Inches.
Kersefontein	11·58
Klipfontein	6·96
Kraaifontein	4·68
O'Okiep	6·79
Piquetberg	20·09
Port Nolloth	2·34
Springbokfontein (Gaol)	9·60
The Towers	20·98
Wupperthal	10·39
Zoutpan	12·39
IV. SOUTH COAST—	
Armadale	19·42
Blaauwkrantz	35·98
Bredasdorp	21·02
Buffels Nek	52·61
Cape L'Agulhas	16·90
Cape St. Francis	29·61
Centlivres	14·54
Concordia	42·49
Dunbrody	13·89
Ezeljagt	18·61
Forest Hall	29·55
Geelbek's Vlei	17·34
George	38·66
Great Brak River	24·16
Hankey	15·82
Harkerville	38·52
Heidelberg	22·68
Humansdorp	26·07
Karnmelks River	21·97
Knysna	29·06
Lottering	36·38
Melkhoutfontein	17·40
Millwood	49·49
Mossel Bay	18·10
Plettenberg Bay	22·58
Port Elizabeth (Harbour)	20·38
Riversdale	19·07
Shark River (Nursery)	23·30
,, (Convict Station)	21·87
Sour Flats	35·85
Storm's River	47·74
Swellendam	35·89
Tankatara	17·16
Uitenhage	18·34
,, (Inggs)	16·59
Van Staaden's (Upper)	31·05
,, (Lower)	35·26
Vogel Vlei	23·33
Victoria Park (P.E.)	20·77
Walmer Heights (near Port Elizabeth)	30·53
Witte Els Bosch	39·81
Witteklip	35·43
Zuurbraak	35·93
V. SOUTHERN KARROO—	
Amalienstein	17·25
Bok River	16·06
Calitzdorp	12·50

	Inches.
V. SOUTHERN KARROO—*Continued.*	
Grootfontein	5·72
Ladismith	15·10
Oudtshoorn	12·10
Pietermeintjes	11·40
Touws River (D.E.'s Office)	9·04
Triangle	12·11
Uniondale	12·91
Verkeerde Vlei	10·77
VI. WEST CENTRAL KARROO—	
Baaken's Rug	8·99
Beaufort West	9·83
Camfer's Kraal	8·15
Dunedin	6·02
Fraserberg Road	6·98
Laingsberg	4·81
Lower Nel's Poort	9·46
Nel's Poort	8·40
Prince Albert	7·68
Prince Albert Road	2·30
Roosplaats	4·43
Steytlerville	6·07
Willowmore	7·48
Zwartberg Pass	34·06
VII. EAST CENTRAL KARROO—	
Aberdeen (Gaol)	13·13
,, (Bedford)	15·36
Bloemhof	16·51
Cookhouse	16·82
Cranmere	15·35
Glen Grey	14·23
Graaff Reinet	15·50
Do. (College)	15·00
Do. (Engineers' Yard)	14·42
Jansenville	10·78
Kendrew (Holmes)	14·55
Do. (Edwards)	13·38
Klipdrift, De Erf	12·76
Klipfontein	13·46
Longhope	11·35
Middlewater	12·42
New Bethesda	16·69
Patrysfontein	16·27
Pearston	16·57
Rietfontein	8·59
Roode Bloem	30·94
Somerset East	27·68
Do. (College)	29·68
Toegedacht	11·35
Walsingham	17·01
Wellwood	16·11
Do. (Mountain)	12·56
Winterhoek	17·63
VIII. NORTHERN KARROO—	
Beyersfontein	13·67
Biesjesdam	11·23
Boschfontein	17·63
Brakfontein	10·63

VIII. NORTHERN KARROO— *Continued.*

	Inches.
Britstown	17·08
Carnarvon	11·67
Colesberg	21·23
Cradock	14·43
Do. (Rose)	14·09
Daggaboer's Nek	19·16
De Aar	16·38
Doorskuilen	17·97
Drummond's Park	17·57
Glen Roy	23·44
Hanover	16·60
Haasfontein	16·46
Hillmoor	19·24
Kleinhaasfontein	20·81
Maraisburg	17·59
Middelburg (Begley)	11·41
Middle Mount	13·43
Petrusville	19·46
Philip's Town	17·56
Phizantefontein	7·14
Riet Vlei	16·69
Spring Valley	15·69
Steynsburg	21·87
Do. (Nesemann)	21·21
Stonehills	12·82
Tarkastad	18·34
Varken's Kop	15·81
Victoria West	13·81
Vogelstruisfontein	6·97
Wagenaar's Kraal	8·25
Zeekoegat	12·62

IX. NORTHERN BORDER—

Avoca (Herbert)	14·24
Barkly West	22·27
Campbell	17·48
Douglas	18·38
Eskdale	12·52
Griqua Town	14·39
Hope Town	13·44
Karree Kloof	11·53
Kimberley (Gaol)	21·67
Do. (Stephens)	24·27
Newlands (Div. Barkly West)	19·53
New Year's Kraal	10·80
Orange River	12·22
Pella	1·27

X. SOUTH-EAST—

Adelaide	18·12
Alexandria	22·07
Alice	22·29
Atherstone	18·71
Balfour	30·54
Bedford (Gaol)	26·00
Do. (Hall)	26·63
Berlin	23·09
Cata	43·84
Cathcart	27·88

X. SOUTH-EAST—*Continued.*

	Inches.
Chiselhurst	26·98
Cullendale	23·72
Dohne	32·98
Dontsah	37·59
Dynamite	20·98
East London (East)	28·67
Do. (West)	23·09
Evelyn Valley	59·88
Exwell Park, Waku	23·59
Fairholt	22·80
Forestbourne	56·62
Fort Beaufort	17·30
Fort Cunynghame	32·71
Fort Fordyce	23·15
Fort Jackson	22·53
Fountain Head	24·14
Glencairn	32·57
Grahamstown (Bact. Inst.)	23·45
Do. (Gaol)	26·26
Heatherton Towers (near Grahamstown)	12·43
Hogsback	47·69
Isidenge	42·86
Katberg	42·66
Do. Sanatorium	37·42
Kei Road	31·19
Keiskama Hoek	22·81
King William's Town	22·36
Kologha	35·42
Komgha	27·46
Kubusie	20·69
Lyndoch	20·96
Melrose	19·30
Peddie	18·91
Perie Forest	34·62
Port Alfred	19·89
Prospect Farm (Div. Komgha)	13·58
Quacu Forest	35·78
Salem	19·12
Scott's Bottom	17·43
Sterkspruit	27·39
Stutterheim (Wylde)	29·33
Do. (Besté)	28·26
Sunnyside	20·68
Sydney's Hope	22·96
Thaba N'doda	44·85
Thomas River	22·43
Wolfridge	36·11

XI. NORTH-EAST—

Aliwal North (Brown)	20·49
Barkly East	24·94
Blikana	35·11
Bolotwa (Contest)	20·85
Buffelsfontein	17·93
Burghersdorp	22·19
Burnley, Cyphergat	20·48
Carnarvon Farm	23·94
Cyphergat	25·16
Dordrecht	22·24

XI. NORTH-EAST—*Continued.*

	Inches.
Ellesmere	26·03
Glenlyon	39·04
Herschel	25·78
Hex's Plantation	25·50
Jamestown	19·14
Keilands	23·95
Lady Grey	32·44
Lady Frere	22·29
Lyndene	20·84
Mooifontein	20·54
Poplar Grove	21·76
Queenstown (Gaol)	25·03
Rietfontein	22·94
Rocklands	18·49
Sterkstroom	20·57
Thibet Park	22·06
Tylden	24·09
Venterstad	20·38
Whittlesea	19·63

(K.)

LIST OF PAMPHLETS, &c., PUBLISHED BY THE DEPARTMENT OF AGRICULTURE.

Pamphlet.	Author.	Price Per copy.
Spray Calendar	C. P. Lounsbury	1*d.*
Marketing of Fruit	J. F. Pentz	1*d.*
Tomatoes and Fruit for Export ...	A. C. Macdonald	3*d.*
Hop Cultivation	Translated by A. W. Heywood	3*d.*
Peach Yellows	(Reprinted from *Agric. Journal*)	1*d.*
Fruit Pests and Legislation concerning them	C. P. Lounsbury	2*d.*
Fruit from Orchard to Buyer ...	(Reprinted from *Agric. Journal*)	2*d.*
Manual of Practical Orchard Work at the Cape	P. MacOwan and E. Pillans ...	6*d.*
Peach Maggot and Peach Fly ...	... ...	2*d.*
Reports on Viticulture	Baron Von Babo	3*d.*
American Vines, Grafting of ...	,, ...	1*d.*
Reconstitution of Phylloxerised Vineyards	J. F. Marais ... ...1*s.*	0*d.*
Gas Treatment for Scale Insects ...	C. P. Lounsbury	3*d.*
Dairy Breeds	A. C. Macdonald	9*d.*
Dairy Industry in Great Britain ...	,, ...	6*d.*
Dairy Industry in Denmark ...	(Reprinted from *Agric. Journal*)	2*d.*
Dairy and its Products	D. Hutcheon	2*d.*
Wheat Production in Australia ...	A. C. Macdonald ... ...1*s.*	6*d.*
,, ,, ...	W. Halse and J. D. J. Visser ...1*s.*	6*d.*
Liver Disease among Calves ...	Otto Henning	3*d.*
Scab, Its Nature, &c.	D. Hutcheon	3*d.*
Horse Sickness, Treatise on ...	,, ...	2*d.*
Wire-worm in Sheep, Goats, and Ostriches	,, ...	1*d.*
Anthrax, Charbon, Milzbrand or Miltziekte	,, ...	1*d.*
Diseases of the Horse and their Treatment	,, ...1*s.*	0*d.*
Wood, Selection and Seasoning of	Comte M. de Vasselot de Regné	6*d.*
Sand Dunes of Gascony	C. B. MacNaughton	5*d.*
Butter and Cheddar Cheese Making	Silva Jones	1*d.*
The Olive at the Cape	P. MacOwan	2*d.*
Sea Fisheries—Report upon Trawling Operations in False Bay, by "Pieter Faure"	J. D. F. Gilchrist ... 1*s.*	10*d.*
Sea Fisheries—The Mackerel Purse-Seine Fishery	G. B. Goode and J. W. Collins 1*s.*	0*d.*
Description of two new Gobiiform Fishes	G. A. Boulenger, F.R.S. ...	1*d.*
Description of a new S. A. Marine Gasteropod	G. B. Sowerby, F.L.S.	1*d.*

Pamphlet.	Author.	Price per copy.
Ready Reckoner for Cream Testing	L. J. Roberts	1*s.* 0*d.*
The Making of Wine and its Bye-Products	C. Mayer	8*d.*

Agricultural Miscellanea, being extracts from Vols. I. to V. of *Agricultural Journal*—

	Part I., Stock Farming	6*d.*
Do.	Part II., Diseases of Stock and their Treatment	6*d.*
Do.	Part III., Artificial Grasses and Fodder for Stock	6*d.*
Do.	Part IV., Ensilage	6*d.*
Do.	Part V., Dairying	6*d.*
Do.	Part VI., Treatment of Cereal and other Crops	6*d.*
Do.	Part VII., Fruit Culture	6*d.*
Do.	Part VIII., Viticulture and Wine Making ...	6*d.*
Do.	Part IX., Tobacco Culture	6*d.*
Do.	Part X., Forestry	6*d.*
Do.	Part XI., Poultry	6*d.*
Do.	Part XII., Locusts and their Destruction ...	6*d.*
Do.	Part XIII., Possible New Industries for Cape Farmers, with Index	6*d.*

Reprints of the following articles which have appeared at various times in the *Journal* can also be obtained, price 1*d.* per copy :—

"Rinderpest," Dr. Koch's Report; Dr. Koch's further reports March, 1897; "Inoculation for Rinderpest," by D. Hutcheon; "Rinderpest," Dr. Kohlstock's Report on Inoculation; "Preventive Vaccination against Anthrax and Swine Fever;" "Blepharis Capensis—A Cape Cure for Anthrax," by D. Blaine; "Lung-sickness of Cattle;" "Redwater, Texas Fever, or Tick Disease," by Dr. Edington; "Heartwater," by Dr. Edington; "Lampas," by Dr. Hutcheon; "Malarial Catarrhal Fever of Sheep," by Dr. Hutcheon; "International Conference of Sheep Breeders;" "Sheep and Wool," by Dr. Hutcheon; "Wool *versus* Mohair," by W. H. Tooke; "The Common Blue Tick;" "The Bont Tick;" "Tick Heartwater Experiments;" "Tampans or Fowl Ticks;" "A New Poultry Pest," by C. Fuller; "Poultry Raising," by R. S. Guest; "South African Poultry-Keeping," by W. Cook; "Treatment for Worms in Domestic Animals;" "Tree Planting for Farmers," by T. R. Sim; "National Forests," by D. E. Hutchins; "British National Forestry," by D. E. Hutchins; "Elementary Principles of Sylviculture or Woodcraft," by T. R. Sim; "Botanical Observations on Forests of Eastern Pondoland," by T. R. Sim; "Rainfall of South Africa," by D. E. Hutchins; "Agricultural Weather Forecasts in England and South Africa," by D. E. Hutchins; "Brak Land in relation to Irrigation and Drainage," by Prof. MacOwan; "Spray Pump Notes," by C. P. Lounsbury; "Winter Spraying," by C. P. Lounsbury; "Scale Insects on Ornamental Trees and Plants," by C. P. Lounsbury; "Another Introduced Scale Pest," by C. P. Lounsbury; "Two Fruit Tree Beetles," by C. P. Lounsbury; "Two Pine Apple Pests," by C. P. Lounsbury; "The Bagrada Bug of Cabbage and Allied Plants," by C. P. Lounsbury; "Remedy for Mest-Wurmen," by C. P. Lounsbury; "Cabbage Aphis," by C. P. Lounsbury; "The Fruit Fly," by C. P. Lounsbury; "Pear Slug: Paris Green," by C. P. Lounsbury; "Codling Moth in Madeira Fruit,"

by C. P. Lounsbury; "The Codling Moth," by C. P. Lounsbury; "The Codling Moth Again," by C. P. Lounsbury; "The Wattle Bag-Worm," by C. P. Lounsbury; "Citrus Psylla," by C. P. Lounsbury; "Bean Bruchus," by C. P Lounsbury; "Ants: Means of Destroying," by C. P. Lounsbury; "Insect Pests: their Origin and Means for their Suppression," by C. P. Lounsbury; "Insect Friends and Foes," by C. Fuller; "Fumigation Supplies," by C. P. Lounsbury; "Tree Fumigation in California," by C. P. Lounsbury; "Netting for Fruit Trees," by C. P. Lounsbury; "Lecture on Fruit Culture," by E. Pillans; "Report on Failure of Hanepoot Grafts on American Vines;" "The Velvet Bean;" "Locust Destruction: Methods of;" "Monsonia—The Cape Cure for Dysentery," by Prof. MacOwan; "Methods of Preserving Fish by Smoking," by J. D. F. Gilchrist; "The Ocean and its Resources," by J. D. F. Gilchrist; "Trout Breeding and Stocking of Streams," by J. L. Scott; "Collect on Delivery (C.O.D.) System," by T. R. Price; "The Land Laws of the Cape Colony."

The above may be obtained Postage Free from this Department, and Parliamentary Annual Reports from the Government Stationery Office.

The *Agricultural Journal* is issued monthly. The *Journal* will be supplied gratis to any member of an Agricultural Society upon application being made to the Under Secretary for Agriculture by the Secretary of the Society to which such member belongs. Those not entitled to receive the *Journal* free of charge may obtain it from the Printers, Messrs. Townshend, Taylor and Snashall, Loop Street, Cape Town, upon payment of an annual subscription of 5*s*., postage free to any part of South Africa.

INDEX.

Aas-vogel, 12
Aberdeen District, 153
Acts of Colonial Parliament, 35
Adendorf, 190
Aerated Water Factories, 183, 199, 211, 237
African Banking Corporation, 26
Africander Cows, difficulties of milking, 147
Agent-General for Cape Colony, 37
Agricultural Department, 35
  List of Pamphlets issued by, 340
Agricultural Implements Manufacture, Openings for, 214
"Agricultural Journal," 36
Agricultural Labourers :
  Native, *see* that Title
  Openings for, 166, 191, 219, 229, 245, 247
  Scarcity of, 14
Agricultural Produce, Prices of, 330
Agricultural Shows :
  Kokstad, 136
  Port Elizabeth, 220
Agriculturists, Openings for, 161, 227
Albany District, 154
  Ostrich Rearing in, 150
Albert District, 156
Alderney Cattle, 148
Alexandria District, 157
Alice, 245
Aliwal North, 158
Alkaline Soils, Irrigation and Drainage, 126
Alston, E. G., 173, 195
American Dried Fruit, 42
American Vine Cuttings :
  Grafted American Stocks, 66
  Handling, Treatment and Sale of, 64, 214
  Nursery Grafting, 68
  Propagation, 63
  Pruning, 64
  Varieties recommended, 61
Angora Goats, 141, 153, 175, 182, 190, 191, 236
Animals :
  Cattle and Live Stock, *see* that Title
  Fauna of the Colony, 10
  Diseases, Regulations, 151, 203
  Horses, *see* that Title
  Import Regulations, 152
  Veld-sickness, Causes of, 8
Antelopes, 11, 168
Anthracnose or Black-spot, 46
Appeals to Privy Council, 35
Apples, 179, 189
  Market for, 41
Apprentices, Master and Servants Acts, regulations for, 17
Apricots, 41, 44, 215, 216
Architects, Openings for, 206
Area of Cape Colony, 23
Argemone Mexicana, 4
Argentina Lucerne Fields, 111
Artificial Manure :
  Manufacture, Openings for, 187, 199
  Vine Culture, Manures for, 79, 81
Artisans, Skilled, Openings for, 160, 163, 169, 182, 196, 200, 211, 214, 219, 223, 226, 229, 233, 239, 245
Arum Lily (*Disa Grandiflora*), 5
Asses, 146
Asthmatic Patients, Health Resorts for, 181
Australia :
  Dairying in, 134
  Fruit Growing, Australian Competition, 40
  Lucerne Growing, 111
  Winemaking, De Waal's Report, 47
Australian Salt Bush, 195
Ayrshire Cattle, 148

Baboon, 11
Bacon-Curing, Openings for, 165, 235
Bacteriological Institute, Grahamstown, 155
Balfour, 236
Bananas, 43, 217

Banks, 26, 235
Openings for, 170
Bantu Race, 12, 13
Barbarossa Grapes, 61
Barkly East, 161
Barkly West, 253
Barley, 155, 157, 159, 240, 242
Baths and Wash-house, Opening for, 171
Bathurst Burrweed, 4
Bathurst District, 162
Baumann, Mr., Ceres Corn grown by, 176
Baviaan's Kloof, 248
Beaufort West District, 163
Bechuanaland, 254
Bedford District, 164
Ostrich Rearing in, 150
Bee-Keeping, Opening for, 165, 229
Beet Sugar Cultivation, Openings for, 187
Berghaan, 12
Birds, 11
Blackfly Pest, 151
Blacksmiths, Openings for, 160, 169, 182, 197, 199, 211, 214, 226, 245
Black-spot or Anthracnose, 46
Blastophaga, 44
Blue Crane, 11
Blue Gum Tree, 232
Boecho Herb, 239
Boer Goats, 204, 253
Bokke-veld:
Cold, 178
Warm, 180
Bonemeal Fertiliser, 82
Bone-dust for Scale, 179
Bontebok, 11
Bonuses for Establishment of Cream and Butter Factories, 134
Bookbinding Works, 199
Boot and Shoe Factories, 187
Boots and Veldschoen Manufacture, Openings for, 245
Booysen, Mr., 149
Bordeaux Mixture, Spraying Vines with, 46
Boundaries, 1
Brak Land, 126, 167
Brak River, 208
Brandy:
Distilleries, 230
Exports, 27
Bredasdorp District, 166
Brewing, Openings for, 199
Bricklayers, Openings for, 160, 200, 214, 225
Britstown District, 167
Buck, 194
Buffaloes, 11
Builders, Openings for, 160, 169, 197, 206, 211, 214, 226, 233
Bulbous Plants, moisture retained by, 5
Burghersdorp, 156
Burning the Veld, 9, 195
Butchers, Openings for, 182, 188, 197
Butter:
Cream Separators, 159
Imports, reduction in, 133
Lucerne Growing with Butter-making, 108
Railway Transport of, 133
Butterworth, 252
By-woners, 193

Cabernet Grapes, 61
Cala, 253
Caledon District, 168
California Irrigation Systems, 115
Calvinia, Ostrich Rearing in, 150
Candle Factories, 199
Cango Caves, 212
"Cape Agricultural Journal," 36
Cape Gooseberry, 43
Cape Sheep, 204
Cape Town, 170
Wool Season, 139
Carnarvon District, 173
Carpenters, Openings for, 160, 169, 182, 197, 200, 214, 225, 226, 233, 245
Carriage Building, 199
Cart and Waggon Building, Openings for, 169, 244
Cathcart District, 174
Cats, Wild, 11
Cattle and Live Stock:
Annual Returns from various Districts:
Aberdeen, 154
Albert, 157
Alexandria, 158
Aliwal North, 161
Barkly East, 162
Bathurst, 163
Beaufort West, 164
Bechuanaland, 254
Bedford, 166
Bredasdorp, 167
Caledon, 169
Cape, 173
Carnarvon, 174
Cathcart, 175
Ceres, 180
Cradock, 182
East Griqualand, 253
East London, 184
Fort Beaufort, 185
Fraserburg, 187
George, 188

Cattle and Live Stock—*continued.*
Annual Returns, &c.—*continued.*
Graaff Reinet, 191
Hanover, 192
Humansdorp, 197
Jansenville, 198
King William's Town, 201
Knysna, 202
Ladismith, 205
Malmesbury, 206
Middelburg, 207
Mossel Bay, 208
Namaqualand, 209
Oudtshoorn, 212
Paarl, 216
Philipstown, 219
Piquetberg, 219
Prince Albert, 222
Queenstown, 225
Richmond, 226
Riversdale, 229
Robertson, 232
Somerset East, 233
Stellenbosch, 235
Steynsburg, 236
Stockenstrom, 237
Stutterheim, 238
Sutherland, 239
Swellendam, 240
Tarka, 242
Tulbagh, 243
Uitenhage, 244
Uniondale, 245
Victoria, East and West, 246, 247
Willowmore, 248
Wodehouse, 249
Worcester, 251
Breeding, 147, 232
Dairy Cows, 134
Draught Oxen, 147
Prices, 329
Quarantine at Landing Ports, 152
Silage food for, 9
Tuberculin Test, 152
Central Railway, 32
Cereals, Irrigation of, 115
Ceres District, 176
Characters given to Servants and Apprentices, regulations, 17
Cheese-making, 133, 156, 181
Opening for, 165, 181
Prices of Cheese, 135
Chestnuts, 43
Chicory Factory, 199, 200
Christian, H. B., 200
Chrysocoma tenuifolia, 138
Churches:
Aliwal North, 158
Churches—*continued.*
Beaufort West, 163
Bredasdorp, 166
Burghersdorp, 156
Cradock, 181
East London, 183
George, 187
Grahamstown, 155
Humansdorp, 194
King, 198
Malmesbury, 206
Mossel Bay, 208
Oudtshoorn, 209
Paarl, 213
Queenstown, 223
Swellendam, 239
Cigar and Tobacco Factories, 211
Circulating Library, Travelling, 171
Citrous Fruits, 43, 179, 189, 196
Citrullus vulgaris, 6
Cleaning and Dyeing Works, Openings for, 199
Clothes Factory, 199
Clothing, Prices of, 328
Coach and Carriage Building, 199
Cobras, 12
Coffee Cultivation, 252
Importation of Plants prohibited, 49
Cold Bokke-veld, 178
Cold Storage, 39, 134, 200
Colesberg, 180
Colonial Office, 35
Coloured Labour, *see* Native Labourers
Constitution and Government, 35
Constraints of Masters, Servants, and Apprentices, 17
Consumptive Patients, Resorts for, 158, 164, 168, 181, 187, 210
Contracts of Service, 15
Co-operation:
Dairy Farmers, 135
Irrigators, 125
Copper-mining, Ookiep, 208
Copper Ore Exports, 28
Corn Exports, 27
Cowie Valley, 165
Cows, *see* Cattle
Cradock District, 181
Ostrich Farming in, 150
Crane, blue, 11
Cream Separators, 159
Creosoting Works, Knysna, 201
Customs Tariff, 29
Crops:
Annual yield in various districts:
Aberdeen, 154
Albert, 157
Alexandria, 158
Aliwal North, 161

Crops—*continued.*
Annual yield, &c.—*continued.*
Barkly East, 162
Bathurst, 163
Beaufort West, 164
Bechuanaland, 254
Bedford, 165
Bredasdorp, 167
Britstown, 165
Caledon, 169
Cape, 172
Carnarvon, 174
Cathcart, 175
Ceres, 180
Colesberg, 181
East Griqualand, 253
East London, 183
Fort Beaufort, 185
Fraserburg, 187
George, 188
Graaff Reinet, 191
Hanover, 192
Humansdorp, 197
Jansenville, 198
King William's Town, 201
Knysna, 202
Komgha, 204
Ladismith, 205
Malmesbury, 206
Middelburg, 207
Mossel Bay, 208
Namaqualand, 209
Oudtshoorn, 212
Paarl, 216
Philipstown, 219
Piquetberg, 219
Prince Albert, 222
Queenstown, 225
Richmond, 226
Riversdale, 229
Robertson, 232
Somerset East, 233
Stellenbosch, 235
Steynsburg, 236
Stockenstrom, 237
Stutterheim, 238
Sutherland, 239
Swellendam, 240
Tarka, 242
Tulbagh, 243
Uitenhage, 244
Uniondale, 245
Victoria, East and West, 246, 247
Willowmore, 248
Wodehouse, 249
Worcester, 251
Rotation of, 97
Stock Farming with Irrigation, Best Crops for, 125
Crown Lands :
Bechuanaland, 254
Cathcart, Value of, 175
Forest Lands, 238
Sales of, 23
Statistical Tables, 257, 258
Cuscuta Epithymum or "Dodder," 101
Customs Duties, 29

Dairy Farming and Dairying :
Alexandria, 157
Australian Experience, 133
Bedford District, 165
Butter, *see* that Title
Cattle, *see* that Title
Cheese, *see* that Title
East Griqualand, 135
Fort Beaufort, 184
Government Expert's Reports, 134
Government Travelling Dairy, 134
King District, 199
Komgha, 203
Irrigation of Dairy Crops, 115
Openings for, 175, 182, 190, 201, 219, 232, 255
Ostrich and Dairy Farming together, 151
Queenstown District, 224
Riversdale District, 227
Dams, *see* Irrigation
Debt, Public, 26
Devon Cattle, 149
Dexter-Kerry Cattle, 148
Dexter Shorthorned Heifer, 148
Diagrams, 46, 117, 120, 123, 124
Diamonds, Exports, 29, 253
Disa Grandiflora, 5
Diseases of Animals, 151, 203
Divisions of the Cape, 153
Dodder, Parasite of Lucerne, 101
Dogs—Cape Hunting Dog, 11
Domestic Servants, 239
Openings for, 172
Wages, 14
Donkeys, 146
Dordrecht, 248
Douglas, 192
Drainage :
Brak Land, 129
Vineyards, 90
Draught Animals :
Cape Oxen, 147
Horses, 144
Dried Fruit, 42
Openings for, 214
Season for Drying, 153
Drought, 224
Duikers, 12
Dyeing Works, Opening for, 199

East Griqualand, Dairying in, 135
East London District, 183
Wool Exports, 139
Eastern Province Lunatic Asylum, 155
Eastern Section Railways, 33
Education :
Grahamstown, 155
King William's Town, 198
Stellenbosch, 235
Uitenhage, 243
Eland, 11
Electric Lighting, King, 200
Elephants, 10
Elliott, 252
Elytropappus, 7
English Farmers at Queenstown, 223
Ensilage for feeding Dairy Cows, 134
Ericaceæ, 6
Eucalyptus Plant, Imports, 49
Evans, E. & O., on Lucerne Growing, 98
Everlasting Flowers, Exports, 6, 27, 168, 239
Executive Government, 35
Expenditure and Revenue, 26
Exports, 1896–1900, 26

Factory Hands, Wages, 200
Farm Hands, *see* Agricultural labourers
Farmers, Openings for, 250
Farming :
Agricultural Department, Assistance given by, 35
Condition of, 18
Irrigation Farms, 116
Sales of Land, 24
Farriers, 199
Fauna, 10
Feather Dealers, 211
Females and Males, proportionate population of, 25
Fermentation of Wines, Australian System, 63
Fertilisers, 82
Field Grafting of Vines, 66
Figs, 41, 44, 189
Finches, Yellow, 11
Fire Brigades, Suggestion for, 172
Fish and Fish-curing :
Exports, 28
Kei River Industry, 204
Openings for, 166, 206, 219, 229
Flamingoes, 12
Flora, 3
Flower Culture, Uitenhage, 243
Fluming for Irrigation, 119
Fodder Plants :
Green Fodder Distributing Business, Opening for, 171
Irrigation of, 115
Fodder Plants—*continued.*
Karroo Fodder Bushes, 7
Lucerne, *see* that Title
Fort Beaufort District, 184
Frank, Frederick, on Irrigation Farming, 116, 244
Fraserburg District, 185
"Free State Title," 25
French Hoek Valley, 213
French Prunes, 215
Friesland Cattle, 148
Fruit Exports, 27
Fruit Growing :
Aliwal North, 158
Bathurst, 162
Dried Fruit, *see* that Title
Early-Fruit Sorts, disadvantages of, 41
England and Cape, Simultaneous Fruit Season, 40
European Markets, Supplying, 40
Fort Beaufort, 184
Fruit Growers' Association, 39
Humansdorp, 196
Irrigation for, 115, 118
Names of kinds, Ignorance of, 42
Openings for, 38, 153, 163, 175, 182, 199, 203, 214, 233
Orchard Stock, 44
Oudtshoorn, 210
Paarl, 213
Peddie, 217
Pests, 52
Preserving, 43
Queenstown, 224
Tyumie Valley, 246
Uitenhage, 243
Furniture Manufacture, King William's Town, 199

Gamble's Rainfall Diagram, 45
Game Laws, 10
Gannets, 12
Gardeners, Openings for, 219
Gauge of Railways, 32
Gavin, Mr., on Lucerne Growing, 110
"Gebroken" Veld, 8, 189
Gemsbok, 11
George District, 187
German Emigrants, 237
Gie, G., 148
Gingell, Ayliff & Co., Lucerne Seed sold by, 101
Glanders, Precautions against, 152
Glue Manufacture, Openings for, 199
Goats :
Angora, 141, 153, 175, 182, 190, 191, 236
Boer Goats, 204, 253
Milking, 218

Goats—*continued.*
Mohair, *see* that Title
Sheep, Goats employed in Shepherding, 140
Gold :
Bonus for Discovery of, 25
Cradock District, 181
Prince Albert District, 222
Prospecting, Licences for, 25
Golden Cuckoo, 11
Gomphocarpus, 138
"Good Karroo," 7
Gordonia, 255
Government of the Colony, 35
Graaff Reinet District, 189
Grafting of Vine Cuttings, 68
Grahamstown, 154, 155
Grain :
Exports, 27
Malmesbury District, 206
Piquetberg District, 219
Rust on, 96
Wheat, *see* that Title
Granite, 213
Grapes, 41
Australian Varieties, 48
Crystal and Sweetwater, 45
Table Grapes, 60
Wine Grapes, 61
Grazing :
Farm, Cost and Extent of, 254
Lucerne Grazing, 105
"Paddocking" System, 113
Green Fodder Distributing Business, Opening for, 171
Grey Hospital at King William's Town, 198
Griqualand East, 251
Griqualand West, 253
Grobelaars River Valley, 21
Groot Constantia Government Wine Farm, 46
Guano, 82, 184
Guavas, 42

Hackney Stallions and Mares, Importation of, 144
Hamilton, Captain, 146
Hanover District, 191
Hantam Breed of Horses, 181
Hares, 168
Health Resorts, 156, 158, 164, 168, 181, 187, 206, 208, 210, 236, 237, 240, 247
Heartwater, Disease of Sheep, 203
Heaths, Indigenous Species of, 6
Helichrysum Vestitum, 6
Herbert District, 192
Hex River Mountains, 249
Hides Exports, 28
Hippopotamus, 11
Hofmeyr, J. H., 148
Holiday Resorts, 183, 202
Horns, Export of, 27
Horse Sickness, 145, 255
Horses and Horse Breeding :
Cathcart, 175
Draught Horses, 144
Glanders, Regulations, 152
Openings for, 181, 191, 219, 225, 230, 232
Horticulture in the Ceres District, 176
Hottentots, 240
Humansdorp District, 194
Ostrich Rearing in, 150

Idutywa, 252
Immigrant Races, 13
Immortelles, Exports of, 6, 27, 168, 239
Imports, 26, 49
Insects, 12, 49, 169, 218
Inspection of Imported Plants, Fruits, &c., 49
Insurance Companies, Cape Town, 170
Intake Gates, Silting-up of, 122
Invalids, Resorts for, 156, 158, 164, 168, 181, 187, 206, 208, 210, 236, 237, 240, 247
Iron Foundries, 199
Irrigable Lands, Prices of, 198, 211
Irrigation :
Albert District, 156
Barkly East, 162
Beaufort West, 164
Brak Land, 126
Carnarvon, 173
Cathcart, 175
Cereals, 115
Co-operation by Irrigators, 125
Cost of, 116, 121
Douglas, 192
Farm, Starting of, 116
Fields and Garden Plots, 19
Fluming, 119, 120
Gordonia, 255
Leading Water, Methods of, 117
Loans for Irrigation Works, 116
Lucerne Fields, 103
Mossel Bay, 208
Openings for, 154, 192, 205, 219, 228, 240
Pentzia, Sucker-growth, natural irrigation by, 7
Prince Albert, 221, 222
Pumping for, 118
Quantity of Water required per Acre, 121
Queenstown, 223
Rainfall, amount requiring Irrigation, 121

Irrigation—*continued.*
Robertson District, 230
Silt Removal, 122
Skilled Labour, requirements of different Cultures, 115
Stock Farming with, 122
Stutterheim, 238
Suitable Land for, 116
Tanks, 119
Tarka District, 241
Uitenhage, 244
Value of Irrigation Land, 121
Victoria East, 246
Victoria West, 247
Vineyards, 72, 90
Warrenton, 254
Wodehouse, 248, 249
Worcester, 250
Irrigation Board, need of, 224

Jackals, 11, 189
Jam-making, 43
Openings for, 184, 199, 211
Jansenville District, 197
Ostrich Rearing in, 150
Japanese Loquat, 44
Jersey Cattle, 148, 149
Jewish Feather Dealers, 211

Kaffir Corn, 155, 252
Kapaters, 140
Karroo :
Fodder Bushes, 7
Lucerne Growing, 98, 107
Prince Albert District, 221
Sheep Farming, 137
Value of Karroo Land, 245
Viticulture, 45
Kei River, 204
Kerry Bulls, 148
Kimberley, 254
Kingfishers, 11
King William's Town, 198
Knysna District, 201, 250
Kokstad Agricultural Show, 136
Kokstad District, 252
Komgha District, 202
Koodoo, 11
Korhaans, 11
Kraal Manure, 82
Krempelboom, 6
Kuruman, 254

Labour :
Contracts of Service, 15
Master and Servants Acts, 16
Native Labour, *see* that Title
Ladismith District, 204
"Lam-ziekte," or Lame-sickness, 8
Land :
Crown Land, *see* that Title
Prices of Irrigation Land, 198, 211
Statistical Tables, 259
Land Laws, 23
Land Values in Various Districts :
Albany, 154
Albert, 156
Barkly East, 162
Beaufort West, 164
Bedford, 165
Cradock, 182
Fort Beaufort, 184
Fraserburg, 186
George, 188
Graaff Reinet, 189
Humansdorp, 196, 197
King William's Town, 200
Ladismith, 205
Peddie, 218
Piquetberg, 219
Richmond, 226
Robertson, 232
Tarka, 242
Tulbagh, 242
Uniondale, 245
Law Department, 35
Leather Manufacture, Openings for, 169
Legislative Council and Assembly, 35
Lemons, 43, 179, 196
Leopards, 11
Leucadendron, 6
Leucospermum, 6
Library, Perambulating, 171
Licences for Prospecting Gold and precious Minerals, 25
Lime-phosphate, lack of, causing Veld-sickness, 8
Lime Fertiliser for Vine Soils, 82, 85
Lime-burning business, Openings for, 219
Linen Mills, 199
Lions, 11
Live Stock, *see* Cattle, Horses, Stock Farming
Loans for Irrigation Works, 116
Locations, Philipstown, Suggested Abolition of, 218
"Locust Bird," 11
Locusts, 111, 255
Long Kloof Land, 245
Loorie, 11
Loquats, 44
Lucerne Growing, 98
Advantages of, 111
Albert District, 156
Argentina Lucerne Fields, 111
Beaufort West, 164
Bedford, 165

Lucerne Growing—*continued.*
Colonial Experience of, 110
Cost of, and Profit from, 108
Dodder Parasite, 101
Drought, 111, 112
Fodder Plant, Lucerne as, 108, 112
Graaff Reinet, 105, 189
Grazing, 105, 108
Haymaking, 106
Irrigation, 103
Karroo, 107
Locusts and Blight, 111
Longevity of Lucerne, 111
Ostriches, feeding on Lucerne, 108
Oudtshoorn, 210, 211
Outlay for, 113
Prices of Hay, Port Elizabeth, 109
Richmond, 226
Riversdale, 228
Seed, where obtainable and price, 101
Sowing, 99
Stockenstrom, 236
Value of Land under, 109
Lunatic Asylum, Eastern Province, 155
Lung Sickness in Cattle, 255

Machine Shops, 199
Maclear, 252
MacOwan, Professor, 18
Mafeking, 23, 255
Maize Crops, 158, 160, 163, 165, 252, 254
Malays, 13
Malmesbury District, 206
Manures:
Artificial, Manufacture, Openings for, 187, 199
Kraal, 82
Viticulture, 79, 81
Mares, proper feeding of, 144
Market Gardeners, Openings for, 39, 171, 191, 211, 219
Masons, Openings for, 160, 169, 182, 200, 211, 233
Master and Servants Acts, 16
Matatiele, 252
Matches, Manufacture of, 199
Meal Exports, 27
Mealies, 240
Mechanics, 226
Mellish, F., 148
Melons, 41
Merino Sheep, 190
Mesembriaceæ, 4
Middelburg District, 207
Midland Section Railways, 32
Military Tailors, 199
Milk, *see* Dairying
Mineral Baths, Caledon, 168
Mineral Products, 24, 25, 209
Mineral Springs, Malmesbury, 206
Ministers, Government, 35
Mitchell's Pass, 180
Mohair:
Exports, 28, 143
Prices, Port Elizabeth, 154
Quality of fine Mohair, 141
Mohammedans, 13
Moisture, Plants storing, 4
Moles, 11
Monsoon, 40
Montagu, 231
Mossel Bay District, 207
Wool Exports, 140
Morgen of Land, 23
Mount Currie, 251
Mules and Mule-breeding, 145
Muscat Grapes, 46, 61

"Naartje," 43
Namaqualand, 208
Natal Fruit Supply, 43
Native Labourers, 13
Farms, working on, 205, 266
Independence of, 230
Wages, 167, 200, 239
Whites and Natives, Comparison of Wages, 14
Natives, 12
Native Territories, 251
King William's Town, Trade with, 198
Nectarines, 41
New Bethesda, 190
New South Wales, Lucerne Growing in, 111
Niven's Patent Process in Wool Washing, 142
Northern Section Railways, 32
Noxious Insects, 49, 169, 218
Nursery-grafted Vines, Planting of, 67
Nurserymen, Openings for, 155, 169, 188, 197, 200, 211, 223, 229, 243
Nuts, 43

Oat-Hay Crops, 155, 157, 158, 163, 213, 249
Oats, Algerian, 97
Oïdium, Vine Disease, 86
Oil and Paint Manufacture, 199
Oil-crushing, Opening for, 199
Oliphants River, 210
Ookiep, 208
Opuntia, 4
Oranges, 43, 179, 189, 196
Orchards, *see* Fruit Growing
Orchids, 5
Ostriches, 11

Ostrich Farming:
Blackfly Pest, 151
Dairy Farming advantageous with, 151
Feather Exports, 29, 149
Feather Pedlars, 211
George District, 187
Graaff Reinet, 190
Grazing upon Lucerne, 108
Humansdorp, 196
Irrigation Land, feeding from, 124
Ladismith District, 204
Oudtshoorn District, 150, 210, 211
Plucking, 150
Prices of Birds, 109
Rearing Districts, 150
Riversdale, 226, 228
Swellendam, 239
Tarka, 241
Otters, 11
Oudtshoorn District, 209
Garden of Cape Colony, 20
Lucerne Growing in, 99
Ostrich Rearing, 150, 210, 211
Oxalis, 5
Ox-waggons, 253
Oxen, 147
Oyster Breeding, Opening for, 201

Paarl District, 212
Paauw, 11
"Paddocking" System of Grazing, 113
Painters, Opening for, 160, 169, 200, 214, 225
Pamplemousse, 43
Paper-making, Openings for, 199
Parcels Distributing Company, Opening for, 172
Partridges, 11, 168, 194
Peaches, 41, 49, 189
Pears, 41, 189
Peddie District, 216, 246
Pelicans, 12
Penguins, 12
Pentzia virgata, 7
Pests, 49, 151, 169, 218
"Petite Culture" Openings for, 24, 38
Petersburg, 190
Pheasants, 11, 168
Philipstown District, 218
Physical Features, 1
Physalis, 43
Pickstone, H. E. V., 214
Pigs, 165
Farming, Openings for, 199, 235
Swine Fever Regulations, 152
Pineapples, 43, 154, 217
Piquetberg District, 219
Plain Vine Cuttings, Collection and Planting of, 54, 55
Plants, Import Regulations, 49
Platinum, Prospecting, Licence for, 25
Plucking Ostriches, 150
Plums, 41, 49
Polecats, 11
Pondoland, 251
"Poor Whites," 197, 230
Population, 25
Beaufort West, 163
Bedford, 164
Bredasdorp, 166
Britstown, 167
Caledon, 168
Carnarvon, 173
Colesburg, 180, 181
Cradock, 181
Dordrecht, 248
East London, 183
Fraserburg, 185
George, 187
Graaff Reinet, 189
Hanover, 191
Humansdorp, 194
Kimberley, 254
King, 198
Knysna, 201
Komgha, 203
Ladismith, 204
Malmesbury, 206
Middelburg, 207
Mossel Bay, 207
Ookiep, 208
Oudtshoorn, 209
Peddie, 217
Philipstown, 218
Piquetberg, 220
Prince Albert, 221
Queenstown, 223
Richmond, 225
Riversdale, 227
Robertson, 229
Somerset East, 232
Stellenbosch, 235
Steynsburg, 235
Stutterheim, 237
Tarkastad, 240
Tembuland, 253
Tulbagh, 242
Uitenhage, 243
Uniondale, 244
Victoria West, 247
Wellington, 216
Willowmore, 247
Port Alfred, 162
Port Elizabeth, 220
Mohair Sales, 154
Port Nolloth, 209
Post Office Savings Bank, 26

Potato Cultivation, 155, 157, 158, 161, 164, 226, 227, 240, 249
Poudrette Fertiliser, 82
Poultry Farming, Openings for, 171, 197, 199, 219
Precious Stones and Minerals, 25, 29
Preston, Messrs., Orchards of, 175
Prices:
Cereal Land, Caledon, 169
Clothing, 328
Honey, Riversdale, 229
Lucerne Hay, Port Elizabeth, 88
Provisions, Tables, 327
Stock and Animals, 328
Prickly Pear, 4, 153, 190
Prince Albert District, 221
Prince Alfred's Hamlet, Viticulture at, 177
Printing Works, 199
Produce Merchants, 219
Proteaceæ, 6
Prospecting Licences, 25
Process Engravers, 199
Prunes, 215
Pruning Vines, 74, 78
Public Debt, 26
Public Works Department, 35
Puff-Adders, 12
Pumping for Irrigation, 118

Quails, 11
Qualification for Voters, 35
Quarantine Regulations, 151
Queenstown District, 223

Railways, 32
Fares, 34
Luggage Rates, 34
Refrigerating Cars on, 133
Sleepers, Manufacture of, 199
Time Tables, Cape Mean Time, 34
Up-Country Export, Facilities for, 38
Rainfall, 40, 45
Diagrams illustrating, 46
Irrigation, Rainfall requiring, 121
Statistical Tables, 332
Various Districts, Rainfall in:
Aberdeen, 153
Albany, 156
Albert, 157
Alexandria, 158
Barkly East, 161
Bathurst, 162
Beaufort West, 164
Bredasdorp, 167
Caledon, 169
Cape Town, 173
Ceres, 179
Rainfall—*continued.*
Various Districts, &c.—*continued.*
Colesberg, 180
Cradock, 182
Douglas, 193
Fort Beaufort, 184
Fraserberg, 185
George, 188
Gordonia, 256
Graaff Reinet, 191
Hanover, 192
Humansdorp, 195
Jansenville, 197
King, 199
Knysna, 202
Malmesbury, 206
Middelburg, 207
Mossel Bay, 208
Namaqualand, 209
Oudtshoorn, 209
Peddie, 217
Philipstown, 218
Piquetberg, 220
Port Elizabeth, 221
Prince Albert, 221
Queenstown, 223
Richmond, 225
Riversdale, 229
Robertson, 229
Somerset East, 232
Steynsburg, 235
Swellendam, 239
Tarka, 241
Tulbagh, 243
Uitenhage, 243
Uniondale, 245
Victoria East and West, 246, 247
Willowmore, 247
Wodehouse, 248
Worcester, 250
Raisin Blanc, 60
Ram Sales, Beaufort West, 139
Red Chasselas Grapes, 61
Red Hanepoot Grapes, 60
Red Muscadel Grapes, 60
Refrigerating Cars on Railways, 133
Rents, Tables of, 324
Revenue and Expenditure, 26
Rhenoster Bush, 7
Rhinoceros, 11
Rhodes, Rt. Hon. C. T., 213
Rhubarb Cultivation, Komgha, 204
Richardia Africana, 5
Richmond District, 225
Riebeek College, Uitenhage, 243
Rinderpest, 255
Ringhals Snake, 12
Riversdale District, 226
Ostrich Rearing in, 150

Robertson District, 229
Robinson South African Banking Company, 26
Roman-Dutch Laws, 35
Rooted Vine Cuttings, Planting of, 54
Roots and Vegetables, Irrigation of, 115
Rotation of Crops, 97
Royalties on Crown Lands containing Minerals, 25
Rubidge, Mr., 190
Rust upon Wheat, 96, 159, 169, 176, 210

Saddlery Business, 199
St. John's River, 251
St. Marks, 253
Saldanha Bay, 206
Salomon, Mr., Chicory Factory, 200
Salt Bush, 195
Salt Production, 182, 219, 243
Salt Soils, Drainage of, 126
Saw-milling, Opening for, 187
Scab Act in Native Territories, 140, 252
Scale Insects, 44, 179
Schoen Vlei Farm, 174
Scorpions, 12
Scotch Emigrants, 238
Scrub Exterminator for eradicating Prickly Pear, 190
Secretary Bird, 12
Seed Merchants, Openings for, 199
Servants, Openings for, 172
Settlers, General Openings for, 213, 218, 246
Seymour Sanatorium, 236
Shearing of Sheep, 139
Sheep and Sheep Farming, 137
  Goats used for leading Sheep, 140
  Graaff Reinet District, 190
  Karroo, 137
  Komgha, 203
  Merino, 175
  Native Sheep-owners, 140, 252
  Quarantine of Imported Sheep, 152
  Ram Sales, Beaufort West, 139
  Richmond District, 225
  Scab Act, 140
  Shearing Times, 139
  Sheep-tracks on Veld, forming Sluits, 9
  Steynsburg District, 235
  Wool, *see* that Title
Sheppard Bros., Jam Factory, 235
Shipping Business at Mossel Bay, 208
Shop Assistants' Wages, 200
Shorthorn Cattle, 148
Shrews, 11
Silage, 9, 165
Silt Removal, 122
Silver, Prospecting, Licences for, 25
Silver Tree, 6
Skins, Exports, 28
Small Holdings, 24
Smith Bros., Vineyards, 244
Snakes, 12
Snipe, 168
Soap Manufacture, 199
Soda-Water Factory, 237
Soils in various Districts:
  Albany, 154
  Alexandria, 157
  Aliwal North, 160
  Barkly East, 161
  Bathurst, 163
  Beaufort West, 164
  Bredasdorp, 166
  Caledon, 169
  Cradock, 182
  Douglas, 194
  George, 188
  Graaff Reinet, 189
  Griqualand West, 253
  Humansdorp, 196, 197
  King William's Town, 199
  Knysna, 202
  Komgha, 203
  Ladismith, 205
  Middelburg, 207
  Mossel Bay, 208
  Oudtshoorn, 210
  Riversdale, 228
  Steynsburg, 235
  Stutterheim, 237
  Tarka, 242
  Uniondale, 244
  Victoria West, 247
  Wodehouse, 249
Somerset East District, 232
  Ostrich Farming in, 150
"Sour" Veld, 8
South African Turf Club, 145
Southey, William, 149
Special Customs Rates, Articles bearing, 29
Springs in Fraserburg, 186
Spying out the Country, advice to intending settlers, 45
Squatting:
  Ceres, 178
  Native Labourers, 13
Stallions, 144
Standard Bank of South Africa, 26
Starlings, 11
Statistical Tables, 257
Stellenbosch, 26, 214, 234
Steynsburg, 235
Steytlerville, 247
Stockbreeders, Openings for, 155, 188 197, 200, 229

Stock Farming :
Aliwal North, 159
Britstown, 167
Cathcart, 175
Cattle and Live Stock, *see* that Title
Colesberg, 181
Cradock, 182
Douglas, 193
Hanover, 191
Humansdorp, 195
Irrigation, Stock Farming with, 122, 125
King William's Town, 199
Komgha, 203
Winter Feeding of Stock, 251
Stockenstrom District, 236
Storks, 11
Stone-Fruit Trees from America and Canada, Importation forbidden, 49
Stone-Quarrying, Paarl District, 213
Stonecutters, Openings for, 211
Storekeepers, Openings for, 182, 188, 197, 219
Strawberries, 41, 44
Struben, W. H., 144
Stutterheim District, 237
Sugar Beet Cultivation :
Irrigation, 115
Opening for, 187
Suiker-bosch, 6
Sundays River Estate, Value of Lucerne Land, 110
Sulphur Springs at Aliwal North, 158
Sulphuring of Vines, 86
Sunflower Growing, 217
Sutherland District, 238
"Sweet" Veld, 8
Sweetmeats Manufacture, 199
Swellendam District, 227, 239
Ostrich Rearing in, 150
Swine Fever, Regulations, 152
Syrup and Lime Juice Manufacture, 199

Tabart, Mr., 195
Tailors, 199
Tampan, 12
Tangerines, 43
Tanneries, 187, 199
Tariff of Customs, 29
Tarka District, 240
Taungs, 254
Tembuland, 251, 253
Thomas, W., Lucerne Seed Sold by, 101
Tick Plague, 12, 218
Timber Trade :
Knysna District, 201
Openings for, 157, 199
Tinsmiths, 199, 200
Tobacco Cultivation, 155, 158, 166, 169, 199, 204, 221, 227, 236, 240, 242, 244, 252
Tobacco Factories, 211
Openings for, 199
Topping Vines, 88
Trade Unions, Absence of, 21
Tradesmen, Openings for, 163, 188, 196, 226
Transkei, 140, 251
Transport Animals, Mules as, 146
Travelling Dairy, 134
Treasury Department, 35
Tree-planting, 187
Opening for, 158
Trellising Vines, 75
Tsetse Fly not found in Cape Colony, 12
Tuberculin Test for Imported Breeding Cattle, 152
Tulbagh Division, 242
Turnips, 251

Uitenhage District, 243
Ostrich Rearing in, 150
Umtata, 252, 253
Under-drainage of Land, 130, 132
Uniondale District, 244
Up-Country Market for Cape Growers, 38
Upington, 256

Vaal, Mr. De, 174
Value of Land, *see* Land Values
Vegetables and Roots, Irrigation of, 115
Veld :
Burning the Veld, 8
"Resting" the Veld, 113
Soils, varying qualities of, 8
"Veld-sickness," Causes of, 8
Vette River, 226
Victoria East, 245
Victoria West, 246
Vine Culture, 45
American Vines, *see* that Title
Ceres District, 176
Cuttings, Collection and Planting of, 53, 54
European Varieties recommended, 45
Field Grafting, 66
Grapes, *see* that Title
Importation of Vines restricted to Government, 49
Ladismith District, 204
Manuring, 79
Nursery Grafted Vines, planting of, 67
Nursery Planting of Grafted Cuttings, 70
Oïdium Disease, 86

Vine Culture—*continued.*
Openings for, 153, 204, 214
Paarl, 213
Pruning and training, 74, 78
Robertson District, 229
Scions for grafting, selecting and preserving, 73
Soils for, 51
Suckering, 89
Sulphuring, 72, 86
Trellising, 75
Topping, 88
Uitenhage, 244
Worcester District, 250
Vineyards:
Draining of, 91
Irrigation, 72, 91, 115
Laying out, 55
Windbreaks for, 58
Winter and Summer Cultivation, 78
"Voorlopers," 141
Voters, Qualification for, 35
Vryburg, 23, 255

Waal, J. P. de, Treatise on the Vine, 47, 51
Wages:
Artisans and Skilled Workmen, 21, 167, 186, 225, 226, 230
Domestic Servants, 14, 239
Factory Hands, 200
Farm Hands, 166
Native Labourers, 13, 167, 200
Produce-Sharing System, 13
Shop Assistants, 200
Statistical Tables, 324
Whites and Natives, Comparison of Wages paid to, 14
Waggon and Cart Building, 250
Opening for, 214
Walnuts, 43
Warrenton, Irrigation at, 254
Water:
Board, Suggested, 238
Conservator, Need of, 224
Irrigation, *see* that Title
Leading Water, Methods of, 117
Sheriff, 19
Water-Melons, 6
Wattle Growing, 199, 237
Weeds in Lucerne, Eradicating, 105
Well-boring, 229
Wellington, 214, 215, 216
Western Section Railways, 32
Wheat Growing:
Aliwal North, fertile soil for, 161
Best Varieties, 97
Crops, Annual Yield, *see* that Title
Lazy Man's Crop, 107
Karroo, 107
Rust or Blight upon, 96
Statistics of Production, 93
White Hanepoot Grapes, 60
White Muscadel Grapes, 60
Wild Duck, 168, 194
Willcocks, W., 20
Willowmore, Ostrich Rearing in, 150
Windbreaks for Vineyards, 158
Winemaking:
Caledon District, 169
Centres for Winemaking, 45
Exports, 27
Farms—Native Labourers' Wages partly paid in Wine, 13
Fermentation, Australian System, 63
Groot Constantia Government Farm, 46
Openings for, 219
Winter Feeding of Stock, 251
Wodehouse District, 248
Wondercorn, 176
Wood Ashes for Fertilising, 82
Wood Cutting Industry, Zitzi Rama Forest, 196
Wool:
Cathcart District, 176
Ceres, 178
East London, 139
Exports, 29, 140, 142
Fleece-washed, 142
Opening for Woolwashing Industry, 183
Season, Cape Town, 139
Swellendam, 239
Transkei, 140
Uitenhage, 243
Washeries and Pressing Works, 142, 199
Worcester District, 249
Working Men, Position of in Cape Colony, 21

Zak River, 185
Zuur Brak, 240
Zuur Veld, 195, 196
Zwaartberg Pass, 222

BRADBURY, AGNEW, & CO. LD., PRINTERS, LONDON AND TONBRIDGE.

The Eastern Telegraph Co.

In Connection with The Eastern Extension, Western, Eastern and South African, West African, and African Direct Telegraph Companies.

TARIFF per word from and to Cape Colony, Natal, Orange River, and Transvaal Colonies

FROM THE CAPE, &c.

	s.	d.
To Europe.		
Great Britain and Europe ...	2	6
Azores	3	1
To Africa.		
EAST COAST:—		
British East Africa, Mombasa	2	1*
,, ,, ,, Other Places	2	5*
German East Africa	2	3*
Lorenço Marques	0	5*
Madagascar	2	9*
Mauritius	1	1*
Mozambique	2	2*
Ressano Garcia, Chibuto and Inhambane	0	6*
Seychelles	2	1*
Zanzibar	2	1*
WEST COAST & adjacent Islands.		
Ascension	2	1*
Bathurst	2	6
Bonny	2	6
Brass	2	6
Canaries	2	6
Accra and Sekondi	2	6
Lagos	2	6
Madeira	3	0
St. Helena	1	1*
Swakopmund	1	3*
Sierra Leone	2	6
NORTH:—		
Algeria	2	6
Egypt, Alexandria	3	6
,, 1st Region	3	9
,, 2nd ,, ...	3	11
,, 3rd ,, ...	4	2
Tangier	2	6
Tripoli	2	6
Tunis	2	6
RED SEA PORTS:—		
Aden	2	1*
Perim	2	7*
Suakim	3	7*
To Asia.		
CHINA:—		
Hong Kong, Shanghai, Amoy and Foochow	7	2*
INDIA:—		
India	4	10*
Burmah	5	0*
Ceylon	4	11*
STRAITS SETTLEMENTS:—		
Malacca and Native States, Penang and Singapore ...	6	1*
To Australasia.		
New Caledonia	2	11*
New South Wales	2	3*
New Zealand	2	7*
Queensland	2	3*
South Australia	2	3*
Tasmania	2	6*
Victoria	2	3*
West Australia	2	3*
To North America.		
New York City, Quebec, and Ontario	3	6
New York (State) and District of Columbia	3	8
Illinois and Indiana	3	9
California & Washington (State)	4	0

TO THE CAPE, &c.

	Durban	Other Places
	s. d.	s. d.
From Great Britain	2 6	2 6
	frs. cts.	frs. cts.
,, Continent of Europe ...	3 12⁵	3 12⁵
	r. a.	r. a.
,, Aden	1 8	1 8
,, Perim	1 14	1 14
,, Zanzibar and Mombasa	1 8	1 8
	r. cts.	r. cts.
,, Seychelles...	1 50	1 55
,, Mauritius	0 75	0 80
	reis	reis
,, Mozambique	595	615
,, Lorenço Marques ...	100	120
	s. d.	s. d.
,, Ascension	2 0	2 1
,, St. Helena...	1 0	1 1
,, Bathurst, Sierra Leone, Accra and Sekondi, Lagos, Brass & Bonny	2 6	2 6
	mills	mills
,, Egypt, Alexandria ...	170	170
,, ,, Cairo, Suez and Port Said ...	180	180
	r. a.	r. a.
,, India	3 9	3 11
,, Burmah	3 11	3 13
,, Penang, Malacca, and Singapore	$ c. 3 00	$ c. 3 05
,, Labuan	3 25	3 30
,, Hong Kong, Shanghai, Amoy and Foochow...	3 55	3 60
,, AUSTRALASIA:—		
S'th & West Australia, Victoria, New South Wales, & Queensland	s. d. 2 2	s. d. 2 3
,, Tasmania	2 5	2 6
,, New Zealand	2 6	2 7
,, NORTH AMERICA:—		
New York City, Mass., &c.	$ c. 87	$ c. 7
New York State other offices, District of Columbia, Maryland, Pennsylvania, &c.	90	90
Alabama, Georgia, Illinois, Ohio, Tennessee, Virginia, &c.	93	93
Arkansas, Colorado, Iowa, Kansas, Texas, Wyoming, &c. ...	96	96
British Columbia, California, Washington (State), &c....	99	99

* On Telegrams handed in at the Company's Durban Station these tariffs are reduced by 1d.

Further Tariffs and information forwarded on application at the Company's Stations:—

CAPE TOWN: Standard Bank Buildings. DURBAN: Town Hall.

Head Office: Electra House, Finsbury Pavement, London, E.C.

By Order, GEO. DRAPER, *Secretary.*

South African Cables.

THE cables connecting South Africa with Europe *viâ* the East Coast were laid and opened for traffic in December, 1879, under arrangements made between the EASTERN TELEGRAPH COMPANY and the EASTERN AND SOUTH AFRICAN TELEGRAPH COMPANY on the one side, and the Governments of Great Britain, Cape Colony and Natal on the other.

The laying of these cables was found to be urgently necessary owing to the outbreak of the Zulu War during that year.

This single line was sufficient for the traffic that existed at that period, but about the year 1884 the Parliament of Cape Colony offered a subsidy to any enterprise that would lay an additional cable along the West Coast of Africa. About the same time arrangements were being made by the West African Telegraph Company to connect the French and Portuguese possessions on the West Coast of Africa, and the African Direct Telegraph Company the British Colonies with Europe, *viâ* St. Vincent. In the following year the West African Company completed the line as far as Loanda, and the Eastern and South African Telegraph Company laid the cable thence to CAPE TOWN, touching at Benguela and Mossamedes on Portuguese territory, thus giving a duplicate route to South Africa.

Early in the year 1895 a conference was held in London between the Postmaster-General of Cape Colony, representatives of the British Post Office, and of the Submarine Telegraph Companies, which resulted in an agreement being arrived at whereby the tariff between South Africa and Europe was reduced from 8*s*. 9*d*. to 5*s*. per word, subject to the continuance of the payment of certain subsidies beyond the year 1899. In August, 1899, a further agreement was entered into between the parties in substitution of the previous one, providing for the establishment of a new and third route, by means of cables between Porthcurnow (Cornwall) and Cape Town, touching at Madeira, St. Vincent, Ascension, and St. Helena, which was opened for through traffic in January, 1901, and for a further reduction of tariff from 5*s*. to 4*s*. per word from 1st September, 1900; and an arrangement was come to under which reductions might be made to 2*s*. 6*d*. per word on the basis of a standard revenue—that is to say, if during any three years the annual value of the South African traffic shall have averaged £300,000, the rate should be reduced 6*d*. per word on the 1st of January of the next year. On the 1st of January, 1901, the rate was reduced to 3*s*. 6*d*., on the 1st of January, 1902, to 3*s*., and on the 1st of January, 1903, to 2*s*. 6*d*. per word between South Africa and Europe.

In addition to the cables connecting South Africa and Europe, the associated Companies (the Eastern and Eastern Extension) have connected South Africa with Australia by a direct cable touching at the islands of Mauritius, Rodrigues, and Cocos-Keeling, landing at Perth (West Australia) and Adelaide (South Australia), thus providing additional security to telegraphic communication with Mauritius, and a third route to Australia; at the same time reducing the tariff between South Africa and Australia from 7*s*. 1*d*. to 2*s*. 6*d*. per word, which charge has since been further reduced to 2*s*. 3*d*. The cost of the direct connection between South Africa and Australia was about £1,750,000, making with the expenditure on the Great Britain–South Africa connection, a total of £3,150,000.

These cables, laid entirely without Government subsidy, will not tap any fresh source of revenue, the intention of the Companies being to secure uninterrupted communication with the British Colonies by establishing an entirely new and independent route.

THE BANK OF AFRICA, LIMITED.

Established 1879—*Incorporated under the Companies Acts*, 1862 *to* 1877.

SUBSCRIBED CAPITAL - - - £2,250,000.

In 120,000 Shares of £18 15s. each.

Paid-up, £750,000. **Reserve Fund, £480,000.**

Head Office: 113, Cannon Street, London, E.C.

BRANCHES.

Cape Colony.

ALIWAL NORTH.
CAPETOWN.
Do. Market Branch.
Do. Strand Street.
CRADOCK.
EAST LONDON.
GRAHAMSTOWN.
KIMBERLEY.
KING WILLIAM'S TOWN.
MAFEKING.
MOSSEL BAY.
OUDTSHOORN.
PAARL.
PORT ELIZABETH.
QUEENSTOWN.
SALT RIVER.
SIMONSTOWN.
STUTTERHEIM.
WILLOWMORE.

Orange River Colony.

BETHLEHEM.
BLOEMFONTEIN.
BRANDFORT.
FAURESMITH.
FICKSBURG.
HARRISMITH.
HEILBRON.
JAGERSFONTEIN.
KROONSTAD.
LADYBRAND.
SMITHFIELD.
WINBURG.

Natal.

DURBAN.
IXOPO.
NEWCASTLE.
PIETERMARITZBURG.
RICHMOND.
UMZINTO.

Transvaal.

BARBERTON.
FORDSBURG.
GERMISTON.
JOHANNESBURG.
KRUGERSDORP.
LICHTENBURG.
MIDDLEBURG.
PRETORIA.
VRIJHEID.

East Africa.

BEIRA.
LOURENCO MARQUES.

Rhodesia.

BULAWAYO.
GWELO.
SALISBURY.
UMTALI.

BOARD OF DIRECTORS.

W. FLEMING BLAINE, Esq., *Chairman.*
ROBERT W. CHAMNEY, Esq.
OWEN R. DUNELL, Esq.
ARTHUR A. FRASER, Esq.
ROCHFORT MAGUIRE, Esq.
HERMAN B. SIM, Esq.
JOHN YOUNG, Esq.

General Manager—A. G. MULLINS.

Deputy General Manager—A. WIGHT.
Secretary and London Manager—R. G. DAVIS.

Assistant General Manager—A. BARRON SMITH.

BANKERS.

THE LONDON JOINT STOCK BANK, LTD.
THE BANK OF SCOTLAND.

Letters of Credit and Drafts issued. Bills purchased and collected, and all other banking business transacted with South Africa. Remittances made by telegraph. The purchase and sale undertaken of Colonial Government and other securities. Deposits received for one, two, or three years at rates which may be ascertained on application.

ROBINSON SO. AFRICAN BANKING CO., LTD.

Incorporated under the Companies Acts, and Registered 11*th December*, 1902.

CAPITAL SUBSCRIBED & FULLY PAID,

£1,500,000.

Head Office:

1, BANK BUILDINGS, LOTHBURY, LONDON, E.C.

Branches.

TRANSVAAL: JOHANNESBURG and RANDFONTEIN.
CAPE COLONY: CAPE TOWN and PORT ELIZABETH.
And at PARIS: 11 BIS, BOULEVARD HAUSSMANN.

Directors.

J. B. ROBINSON, Esq., *Chairman.*
ARTHUR HUTTON, Esq.
JAMES TYHURST, Esq., *Managing Director.*

Secretary.

CHARLES F. CARRINGTON.

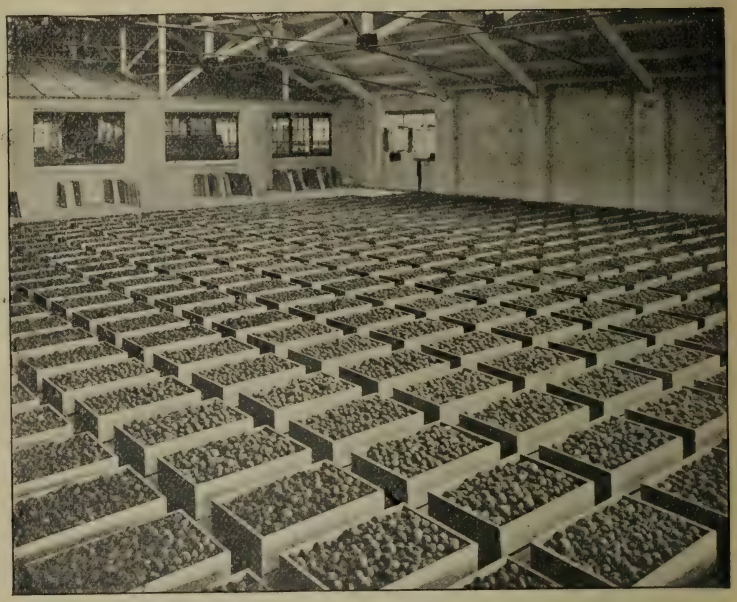
Bankers.

BANK OF ENGLAND. LONDON AND WESTMINSTER BANK, LIMITED.

This Bank transacts a general banking business in connection with South Africa, deals in documentary and other drafts, and issues Letters of Credit, Drafts, and Telegraphic Transfers upon its Branches in the Transvaal and Cape Colony, as well as upon its Agencies in the Transvaal, Cape Colony, Orange River Colony, and Natal.

Deposits received for fixed periods on terms which may be ascertained on application.

SUTTON'S
SEED POTATOES
FOR AFRICA.



The Illustration represents portion of an order for Seed Potatoes recently consigned to a customer in South Africa. The photograph shows the cases left open for examination by one of the Partners.

FOR EARLY USE.

Sutton's Ninety-fold. ***Sutton's Early Regent.***

Sutton's Supreme. ***Sutton's Windsor Castle.***

Beauty of Hebron. ***White Elephant.*** ***Early Rose.*** ***Early Puritan.***

LATE OR MAINCROP.

Sutton's Abundance. ***Sutton's Magnum Bonum.***

The Sutton Flourball.

Up-to-Date. ***The Bruce.***

From the middle of September to the end of November is the best time to export Seed Potatoes from England.

SUTTON'S GRASS SEEDS.
SUTTON'S CLOVER SEEDS.
SUTTON'S ROOT SEEDS.

New, carefully cleaned, and of the highest germinating power.

SUTTON'S

VEGETABLE & FLOWER SEEDS

FOR AFRICA.

ILLUSTRATION FROM A PHOTOGRAPH OF THE PRODUCE OF
SUTTON'S SEEDS in MOZAMBIQUE.

SPECIAL COLLECTIONS of GARDEN SEEDS

For producing a succession of Vegetables and Flowers in Africa throughout the year.

SUTTON'S CHOICE VEGETABLE SEEDS.

A Collection of **58** excellent varieties for one season's supply, **21/-.**
„ **40** „ „ „ **10/6.**

SUTTON'S CHOICE FLOWER SEEDS.

A Collection of **45** of the most beautiful varieties - - **21/-.**
„ **30** „ „ - - **10/6.**

PRICED LISTS POST FREE TO ALL PARTS.

SUTTON & SONS, THE KING'S SEEDSMEN, **READING, Eng.**

ESTABLISHED A.D. 1833.

W. H. BAILEY & SON,

Patentees and Manufacturers

of - - -

SURGICAL INSTRUMENTS and APPLIANCES.

Wholesale Retail, and Export Catalogues
Post Free to any part of the World. . . .

BAILEY'S ASEPTIC . . .

HOSPITAL FURNITURE,

Supplied to most of the leading London and Provincial Hospitals.

SPECIAL CATALOGUE, 250 ILLUSTRATIONS.

SPECIALITY—ELASTIC STOCKINGS.

"VARIX," all about Elastic Stockings; how to wear, clean, and repair them. Post free 4 stamps.

38, OXFORD STREET,
and 2, RATHBONE PLACE, } **LONDON, Eng.**

Colonists desiring Sanitary Accommodation for their households that is at once simple, cleanly and natural, should establish Moule's Earth Closets, for besides being convenient for inside the house, their use avoids all danger of well contamination, and the used Earth promotes the fertility of the ground to a truly marvellous degree, and that by natural means which are absolutely without offence or indelicacy in the application.

Moule's Patent Earth-Closets.

BARON LIEBIG and all other Agricultural Chemists speak in strongest terms of the great value of the product as Manure.

☞ Yet while allowing this to be wasted, high prices are paid for artificial manures.

Dr. BUCHANAN, Mr. J. NETTEN RADCLIFFE, and other Sanitary Experts declare strongly in favour of the DRY EARTH SYSTEM.

MOULE'S Patent EARTH-CLOSETS

Offer the following advantages:—

Simplicity in Construction, rendering expenditure on Repairs unnecessary.

Avoidance of Dangers of Drains and Cess-pools, and no costly expenditure for them.

No Fouling of Water, and consequently no Typhoid.

Moule's Patent Earth-Closets

MOULE'S PATENT Earth-Closets

Are made in all sizes and Forms; Can be fitted in any position; Are adapted for use in Mansions or Cottages, Schools, Hospitals, Workshops Camps and Ships, and on Railways.

The following Pamphlets are sent free on application.

Moule's System of Domestic Sanitation.
Moule's System applied to Hospitals.
Moule's Catalogue and Price List.

MOULE'S PATENT EARTH-CLOSET Co., Ltd.,

5a, Garrick Street, Covent Garden,
LONDON, ENG.

Agents for the Transvaal and Orange River Colonies:—

ÖHMEN & HOPPERT, Fox Street, JOHANNESBURG.

IRON AND WOOD BUILDINGS

SUITABLE FOR

BUNGALOWS, RESIDENCES, &c.,

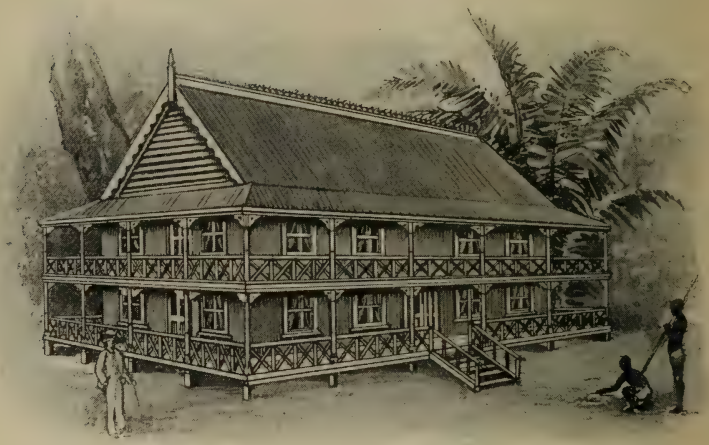
Specially constructed for

Colonial use,

ALSO

Public Halls, Stores, Cattle Sheds, Churches,

. . &c., &c. . .



COLONIAL RESIDENCE.

Buildings marked for Re-erection (and Key Plans provided), or Erected in any part of the World.

CHEAPEST HOUSE IN TRADE.

Designs and Estimates Free.

F. SMITH & Co.,

Offices and Works:

CARPENTERS ROAD, STRATFORD, LONDON.

Telegrams: "IRONIARUM, LONDON." Telephone: 329 STRATFORD.

The Home of
Robert Raikes,
Gloucester.

The Founder
of
Sunday Schools.

Bungalows, Farm Houses, Cottages, Portable Buildings,

For all purposes, made in Wood and Iron.

Our New Patent System of constructing the above of

CEMENT SLABS

is the System of the future.

Buildings so constructed are equal in comfort to those composed of Brick or Stone.

LOW IN PRICE.

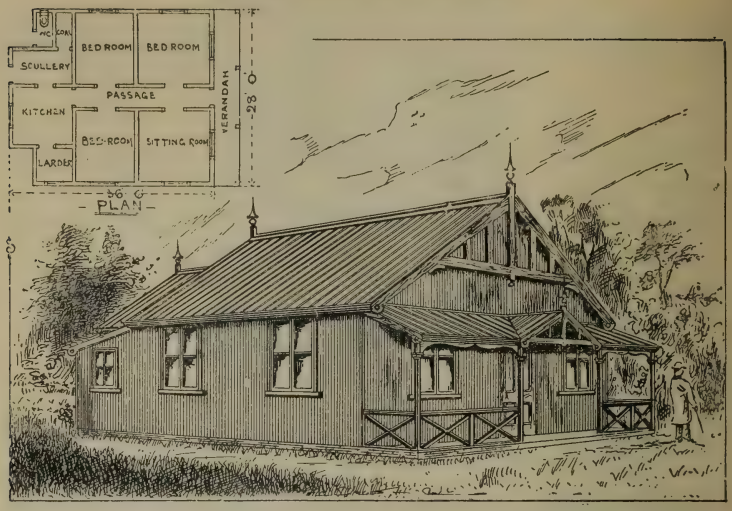
Can be erected without skilled labour in a short time. All Timber Framing covered with an Ant-resisting Varnish. . . .

State requirements to

WILLIAM CALWAY,
Gloucester, ENGLAND.

Special Quotations for Iron & Wire Fencing.

BUNGALOW, £118.



MITSON & HARRISONS'

IRON AND WOOD BUILDINGS,

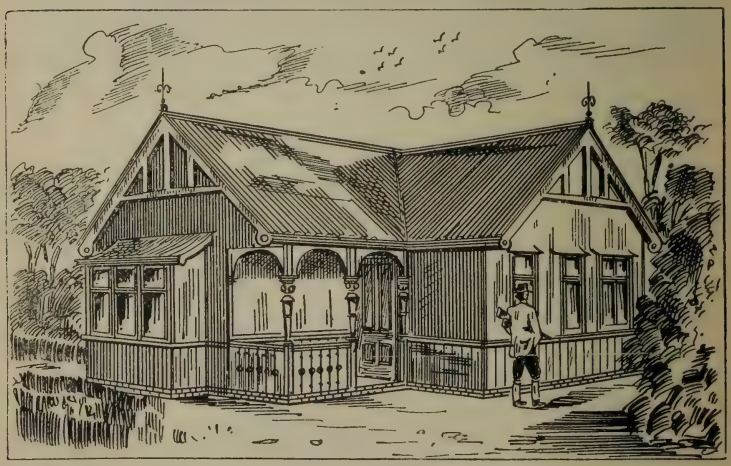
BUNGALOWS, SHOOTING BOXES, STABLES, SCHOOLS AND CHURCHES

OF EVERY DESCRIPTION.

PLANS & ESTIMATES ON APPLICATION. **All Prices include delivery F.O.B. London.**

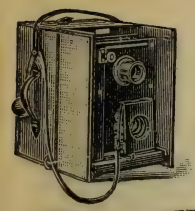
All Timbers properly marked and Key Plans and full Instructions supplied to afford easy erection.

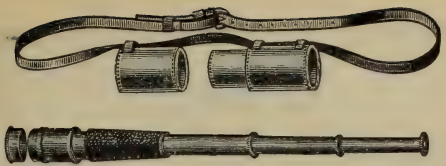
SHOOTING BOX, £82.

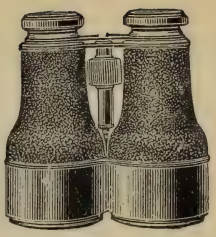


CHIEF WORKS:

DENMARK ROAD, LONDON, Eng.





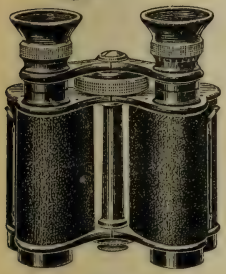


Gold Medals and Highest Awards

at all GREAT EXHIBITIONS. . . .

ROSS, Ltd.,

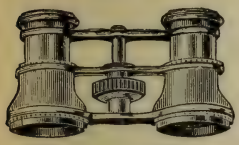
Manufacturers of celebrated



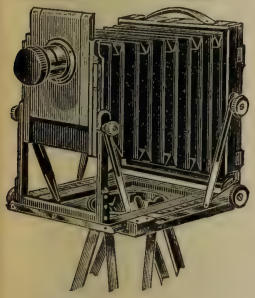
ROSS' SPORTING AND NAVAL TELESCOPES,
Used by Sportsmen, Yachtsmen, and Officers everywhere.

ROSS' NEW PRISMATIC BINOCULAR GLASSES,
The Power of a Telescope in the compass of an Opera Glass.

ROSS' MILITARY AND MARINE GLASSES,
Supplied to H.M. and many Foreign Governments.



ROSS' NEW SERIES OPERA GLASSES,
In Shell, Pearl, Aluminium, &c. Inspection invited.



ROSS' PHOTOGRAPHIC OUTFITS,
For every purpose and for any climate.

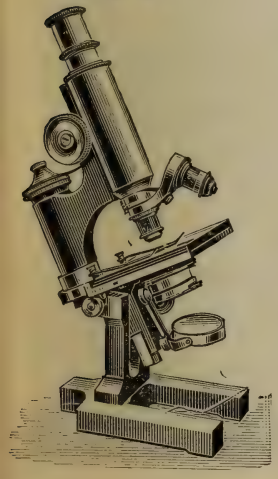
ROSS' NEW TWIN-LENS CAMERAS,
The most perfect Hand or Stand Camera yet made.

ROSS' PROJECTION LANTERNS,
New Patent Models for Science or Enlarging.

ROSS' BAROMETERS AND THERMOMETERS,
For Halls, Libraries, &c., in great variety.

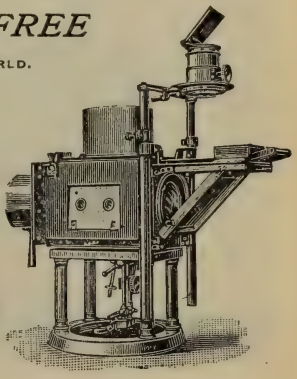
ROSS' POCKET ANEROIDS AND COMPASSES,
Useful sets for Travellers, Tourists, Country Gentlemen, &c

ROSS' SPECTACLES AND EYEGLASSES,
New designs for Walking, Reading, Shooting, &c.



CATALOGUES FREE

TO ANY PART OF THE WORLD.



ROSS, Ltd.,

Manufacturing Opticians,

111, New Bond St., LONDON, W.,

AND

31, Cockspur St., Charing Cross, S.W.,

ENGLAND.

ESTABLISHED 1830.

"COOPER"
STANDS
ALONE
Cooper's
DIPPING
POWDER
ON
THE TOPMOST PINNACLE
OF FAME
A PERFECT SHEEP DIP

Appointed by Royal Warrant Manufacturers of Agricultural Machinery to His Majesty King Edward VII.

RANSOMES, SIMS & JEFFERIES, Ld.,

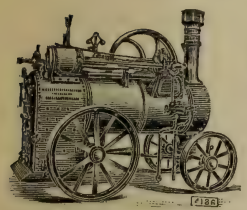
Manufacturers of

The Best Agricultural Machinery.

Among the Prizes awarded to R., S. & J. by the principal British and Foreign Agricultural Societies are included :—**150 Gold Medals, 265 Silver Medals, 335 First Prizes, &c.,** and **"Grand Prix" and Gold Medal** at Paris Exhibition, 1900.

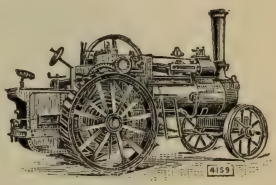
RANSOMES, SIMS & JEFFERIES, Ld.,

MANUFACTURE



Portable Engines for Coal, Wood, Straw, or Petroleum.

Thrashing and Straw-Chopping Machinery.

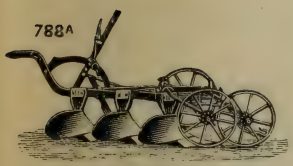


Agricultural Locomotive and Traction Engines.

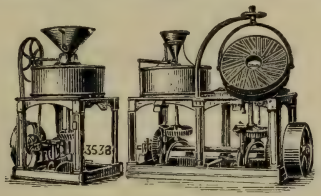
Vertical and Horizontal Engines,

High-Speed Engines,

Cornish, Lancashire & Multitubular Boilers.



Double and Multiple Ploughs.



Corn Grinding Mills.

Iron and Wood Ploughs of all Sorts and Sizes.

Maize Shellers, Potato Diggers, Cultivators, Haymakers, Horse Rakes, Harrows, Etc.

Estimates furnished for any Special Machinery to suit any particular country or System of Agriculture.

Illustrated Catalogues, in various Languages, post free on application.

Orwell Works, Ipswich, England,

AND

9, Gracechurch Street, London, E.C.

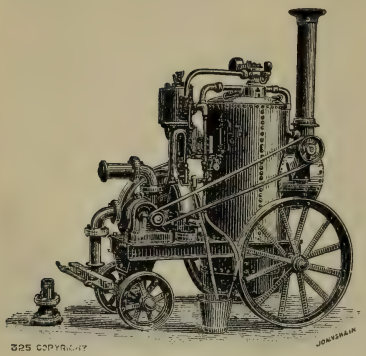
C.C. B B

E. R. & F. TURNER,

LTD.,

(200) IPSWICH,

ENGLAND.



Makers of

PORTABLE ENGINES

(VERTICAL OR HORIZONTAL).

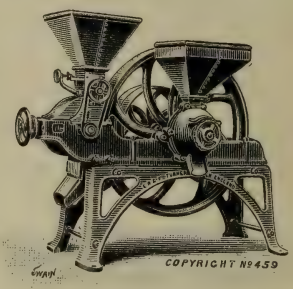
Fitted, if required, with Pump on Frame for Irrigation Work.

First-class Workmanship combined with Moderate Prices.

CORN and SEED CRUSHERS

For Hand, Horse, Steam or other Power.

Very Strong and Durable.



For Crushing or Kibbling Mealies, Oats, Beans, &c.

All Sizes at Moderate Prices.

"INKOOS" MILLS

For grinding Mealies, Barley, Wheat, &c., into fine meal.

For Horse, Steam, or other Power.

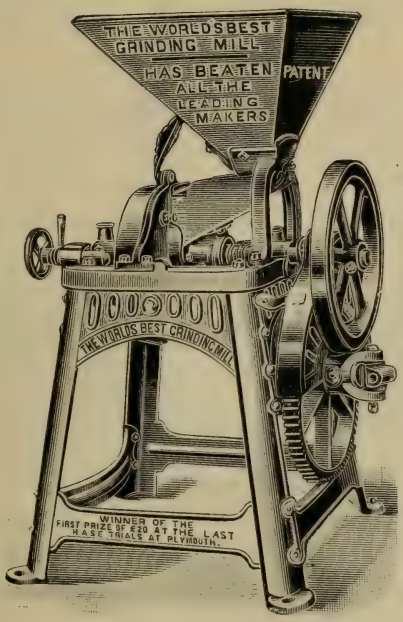
FIRST PRIZE

At Johannesburg - in 1897.
,, Port Elizabeth - ,, 1898.
,, East London - ,, 1899.

Agricultural Implement Depôt.

CORBETT'S MILLS.

HUNT'S HORSE GEARS.


THE WORLDS BEST GRINDING MILL
HAS BEATEN ALL THE LEADING MAKERS
PATENT
THE WORLDS BEST GRINDING MILL
WINNER OF THE FIRST PRIZE OF £20 AT THE LAST H.A.S.E. TRIALS AT PLYMOUTH.

AMERICAN DISC HARROWS AND **LAND ROLLERS.**

SOLE AGENTS FOR THE FOLLOWING :—

Marshall & Sons' Steam Engines and Threshers.

Burgess's Pat Norias, or Water Elevators.

"Decorah" Steel Tower Windmills.

"South Bend" Plow Co.'s American Plows.

Cockshutt Co.'s Double-Furrow Gang Plows.

D. M. Osborne & Co.'s celebrated Reapers & Binders.

All Steel Peg-Tooth and Zig-Zag Harrows

ALSO

The "Cyphers" American Incubator, **Beats everything in the market.**

George Findlay & Co.,

Engineers and Ironmongers,

PARLIAMENT ST. and SPIN ST., CAPE TOWN.

ONE HUNDRED YEARS' GOOD RECORD.

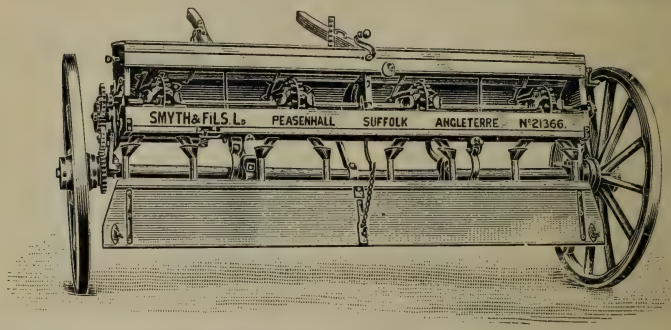
JAMES SMYTH & SONS, Ltd.,

MANUFACTURERS OF

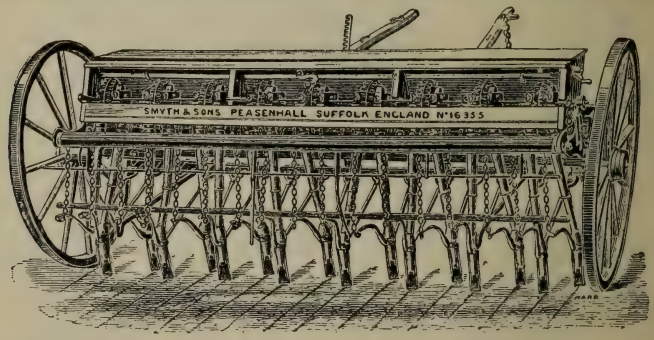
Drills and Broadcast Sowers

FOR ALL KINDS OF GRAIN AND SEEDS.

SMYTH'S BROADCAST SOWER FOR GRAIN AND SEEDS.



SMYTH'S "COLONIAL NONPAREIL" GRAIN AND SEED DRILL.



RECOGNISED THROUGHOUT EUROPE

As the best and lightest of draught. Made to suit all Countries.

J. S. & Sons are not only the oldest and largest manufacturers in England, but also the only Firm who confine themselves to this class of Machinery.

These have also for many years been a **STANDARD ARTICLE IN NEW ZEALAND,** where they have been freely copied, because they are the best.

INTERNATIONAL PRIZE MEDALS.—LONDON, 1862; PARIS, 1867, 1878, 1889; VIENNA, 1873; SYDNEY, 1880; MELBOURNE, 1881. **Also PARIS, 1900.**

Peasenhall, Suffolk, England; and Paris

(8, RUE PHILIPPE DE GIRARD).

The DARBY Land Digger

Is the . . .

Can be attached to any . . . TRACTION ENGINE.

Most economical Steam Cultivator in existence.

IT will dig from 600 to 800 acres a year, and produce a crop worth **at least £1 an acre more** than can be grown on ploughed land.

Everyone knows the value of spade husbandry. The **extra produce** costs the farmer absolutely nothing, whilst one digging outroots all weeds, makes more moulds at one stroke than two or three ploughings, and costs less than one ploughing.

It means £700 (on 700 acres) added to profits with no additional expense.

What other people say about it.

"Its use in early autumn is a **saving of £1 an acre** to the cultivator."

"For deep cultivation without bringing up the subsoil it is the best possible machine."

"I **dug part** of a field and ploughed the remainder; as long as I held the land the crops on the dug land were always the best."

"I have used the Digger with the **best results** for many years."

"I think it is **the best steam cultivator** that ever came on to heavy land."

"The work was excellent, and to my surprise the field has **grown better** crops ever since, although it is six years ago."

"The work done by the Digger is of **far greater value** than ordinary horse ploughing."

"Dug land is always **warmer** and **drier** than ploughed land, and yet it is **moister** in a drought."

"I have dug 560 acres this season (1901). The crops on all the land I dug last year have turned out very well. The Digger has kept in good order and so has the engine."

The above are a few extracts of letters from farmers, whose names and addresses can be given if desired.

Full particulars, with illustrations and numerous testimonials from many practical farmers, will be forwarded on application to

The DARBY Land Digger Co.,

Sole Agents for South Africa:

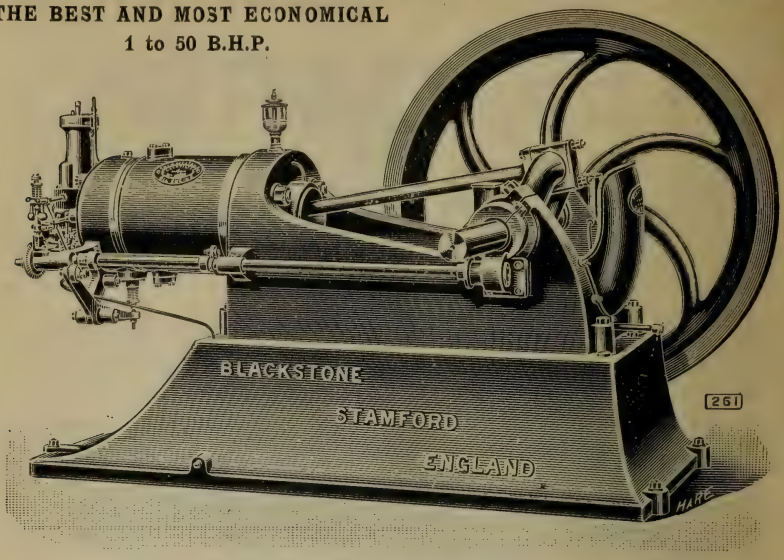
Messrs. Malcomess & Co.,

EAST LONDON, S.A.

Engineering Works,
WICKFORD, Essex,
ENGLAND.

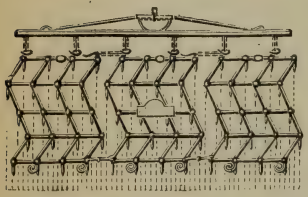
THE BLACKSTONE OIL ENGINES.

THE BEST AND MOST ECONOMICAL
1 to 50 B.H.P.

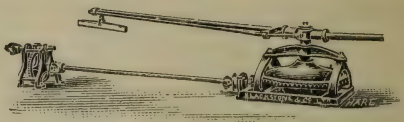


Also Makers of

AGRICULTURAL IMPLEMENTS AND MACHINES.

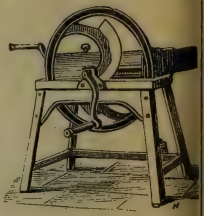


HARROWS for 1, 2, or 3 Horses.



PONY AND HORSE GEARS.
From a Pony Power to 4-Horse Power.

Horse Rakes. Turnover Rakes.
Hand Drag Rakes. Stamford Mowers.



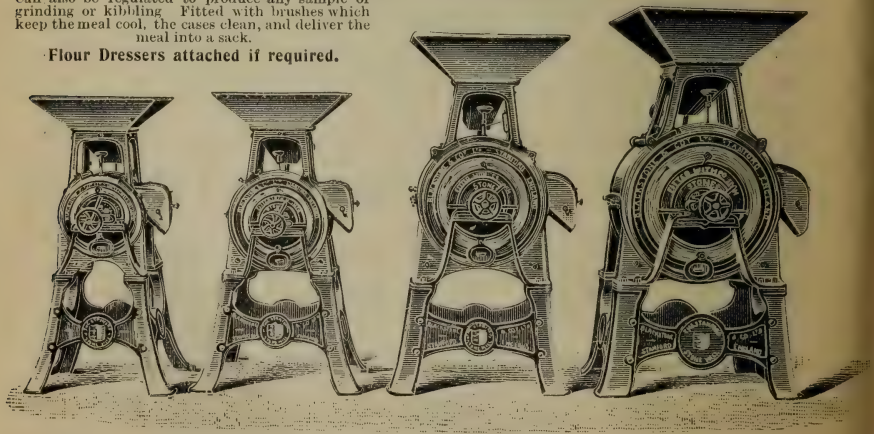
CHAFF CUTTERS.

THE BEST GRINDING MILL

PRODUCES PERFECTLY SOFT MEAL.

Can also be regulated to produce any sample of grinding or kibbling. Fitted with brushes which keep the meal cool, the cases clean, and deliver the meal into a sack.

Flour Dressers attached if required.



CATALOGUE WITH FULL PARTICULARS POST FREE.

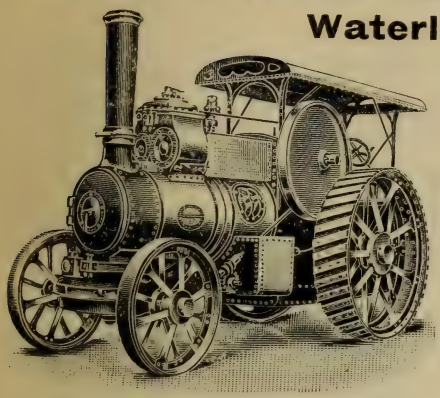
BLACKSTONE & CO., LTD., STAMFORD, ENG.

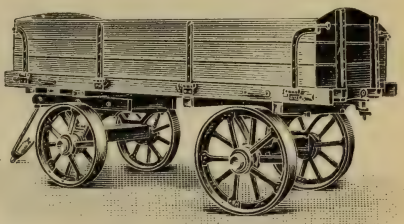
W. TASKER & SONS, Ltd.,

Waterloo Iron Works,

ANDOVER, England.

Contractors to H.M. War Department; The Council of State for India; The Royal Commissioners of Woods and Forests; The Corporation of the City of Cape Town, &c., &c.





The Little Giant Steam Motor or Miniature Road Locomotive.

Weight under 3 tons; power, 4-horse nominal. Strong and efficient, easier to handle than horses. Will readily run both ways, turn in a small space and be driven by one man. Is extremely economical in consumption of fuel and water. Can be fitted with dynamo for Electric Light.

Road Locomotives—High Pressure, Single Cylinder and Compound.

Traction Engines—Spring-mounted.

Portable and Semi-portable Engines.

Thrashing Engines.

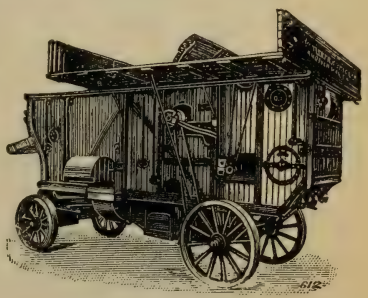
Traction Wagons—Plain or Spring-mounted.

Tipping Wagons.

Transport Vans.

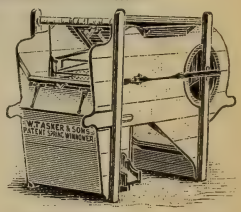
Pole Wagons for Timber.

STACKING MACHINE.



THRASHING MACHINE.

AGRICULTURAL MACHINERY.



CORN DRESSING MACHINE.

CATALOGUES AND ESTIMATES FREE.

W. N. NICHOLSON & SONS, Ltd.,

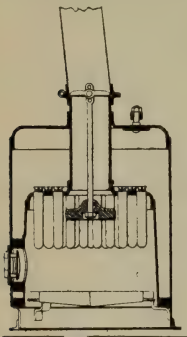
Trent Ironworks,

NEWARK-ON-TRENT, ENGLAND.

TELEGRAMS: "NICHOLSONS, NEWARK, ENGLAND." A.B.C. CODE 4TH EDITION.

Agricultural Machinery.

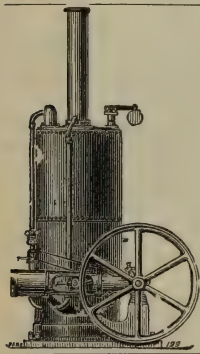
Haymaking Machines and Horse Rakes.
Harrows and Cultivators.
Land and Cambridge Rollers.
Road, Park, and Garden Rollers.
Safety Horse and Pony Gears.
Mills for Poultry Food.
Bone Mills.
Peat Moss Litter Mills.
Grist and Flour Mills and Dressers.
Oil Cake Breaking and Grinding Mills.
Corn Crushers.
Coke Mills.
Chaff and Cane Cutters.
Root Pulpers and Turnip Cutters.
Winnowers and Corn Elevators.
Sack Lifters and Weighing Machines.
Rice Shellers.
Portable and Vertical Steam Engines.



Boiler Department.

Steel semi-fixed Locotype Multitubular Boilers for normal and higher working pressure.
Vertical Cross-tube and "Field" Boilers.
Underfired Multitubular fixed Boilers.
"Colonial" self-contained Boilers.
Cornish, Cylindrical, and Tubular Boilers.
Launch and Marine Return-Tube Boilers.
Patent Sectional Boilers for Mule Porterage.

Boilers carefully made to Drawings.
Drawings and Designs of Boilers furnished.
New Fire Boxes to Portable Boilers, and Repairs.
Tanks, Cisterns, Steam-jacketed Boiling Pans, Digesters and Air Receivers.



Engine Department.

Steam Engines and Boilers, Independent and Combined.
Portable and Semi-portable.
Undertype Semi-fixed, Simple and Compound.
Horizontal, Single and Double Cylinder, Simple Compound and Condensing, on metal or girder beds; also Sectional for easy transport in difficult country.
Feed Water Heaters.
Vertical Inverted, Stationary and Portable.
Capstan Engines. 6 ft. Pan **Mortar Mills.**

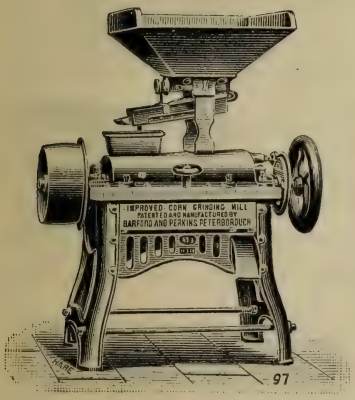
W. N. NICHOLSON & SONS, Ltd.,
Trent Ironworks, Newark-on-Trent, England.
TELEGRAMS: "NICHOLSONS, NEWARK, ENGLAND." A.B.C. Code 4th Edition

Farm Machinery

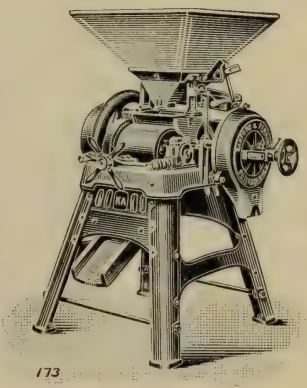
MADE BY

BARFORD & PERKINS,

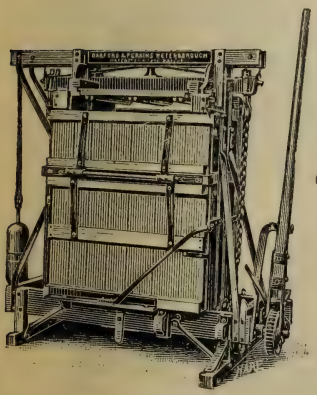
PETERBOROUGH, England.



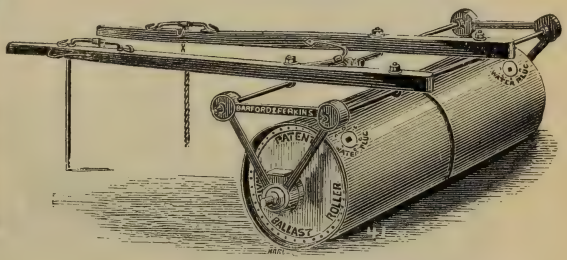
Royal First Prize
Corn Grinding and Splitting Mills.
13,000 in use.



New Patent
Corn Crushing, Splitting,
and Grinding Mills.



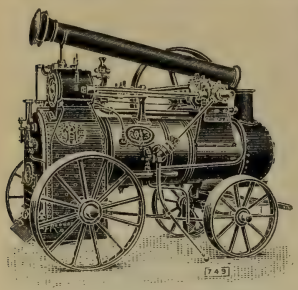
Patent Hand Power Hay and
Straw Press. Large number
in use in South Africa.



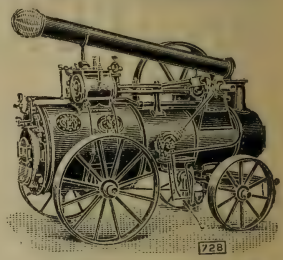
ROLLERS.
Patent Water Ballast and others,
for fields, roads, gardens, &c.

MARSHALL, Sons & Co., Ld.,

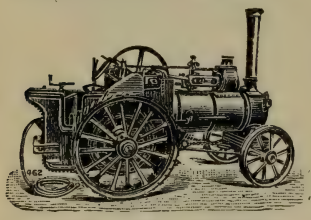
Britannia Iron Works,
GAINSBOROUGH, England.



Portable . .
and Semi-
Portable . .
Engines. . .



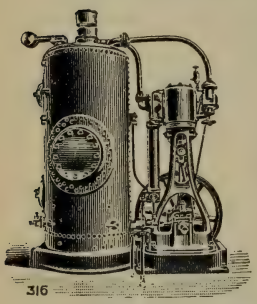
Traction . .
Engines, . .
and Royal Society's
First Prize
Thrashing .
Machines. .



Corn Grinding Mills. Horizontal Engines, up to 1,000 H.P.

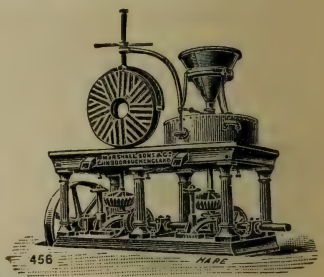
Vertical Engines, with and without Boilers.

Road Rollers, and Maize Shelling Machines, &c.

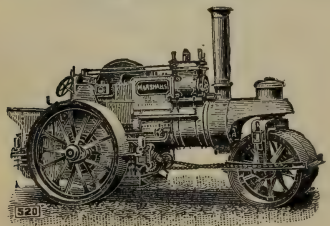


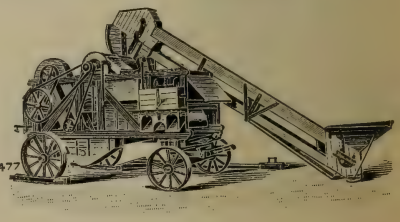
Undertype
Engines.

Over 95,000 - -
Engines, Boilers,
and Machines -
made and - - -
supplied.



DOUBLE MILL.





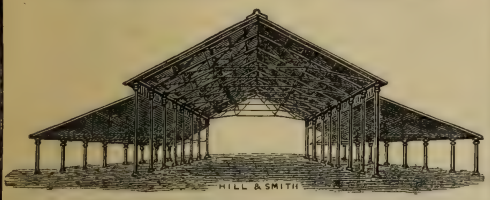
Representatives in South Africa:

GEO. FINDLAY & CO., CAPE TOWN; BRITISH ENGINEERS ALLIANCE, Ld. (late Howard Farrar & Co.), JOHANNESBURG; D. E. HOCKLY & CO., EAST LONDON; E. F. FORD PIETERMARITZBURG; and E. W. TARRY & CO., Ld., KIMBERLEY.

HILL & SMITH,

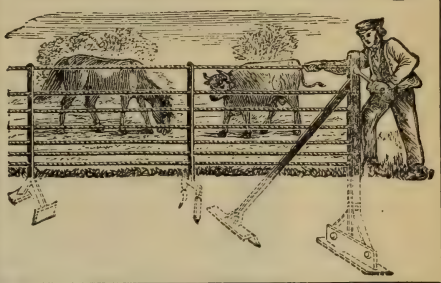
Brierley Hill Ironworks,
STAFFORDSHIRE, England.

Galvanized Iron Roofs.

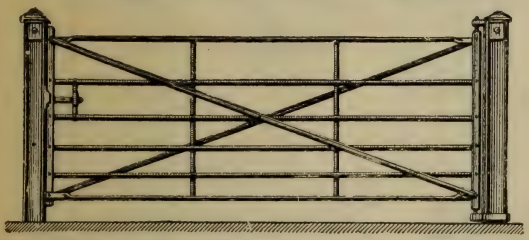


Catalogues and Prices free on application.

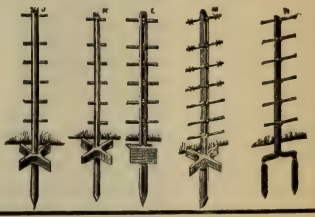
Strained Wire Fencing.



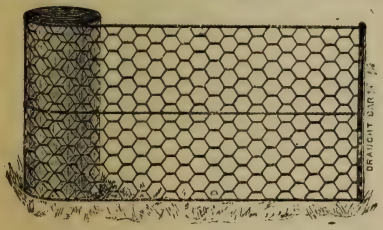
Wrought Iron Field Gates.



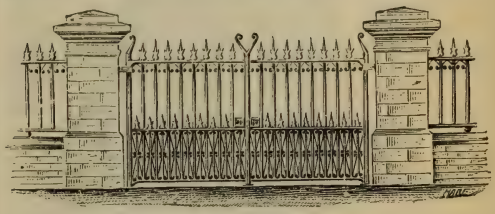
Standards of every description.



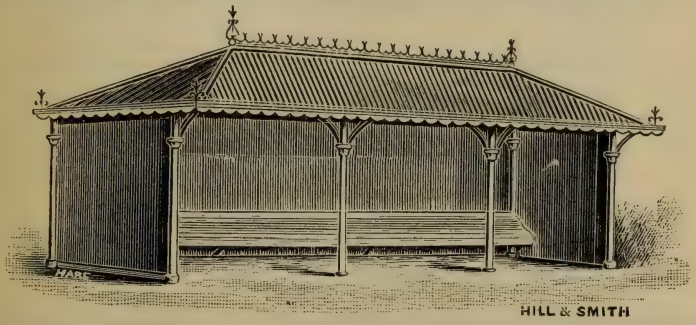
Galvanized Wire Netting.



Entrance Gates and Railings.



Galvanized Iron Pavilions for Pleasure Grounds.



London Office: 118, Queen Victoria Street, E.C.

BAYLISS, JONES & BAYLISS, LTD

WOLVERHAMPTON.

LONDON SHOW ROOMS:-
139&141 CANNON ST E.C.

CATALOGUES FREE.

(Established 1826)
Manufacturers of
IRON and WIRE
FENCING GATES, &c.

CATTLE FENCING.

At Low Prices.

Patent Self-Adjusting
UNCLIMBABLE ROUND-BAR RAILING.
With Blunt Points. If with Sharp Points same price. Made up to 8-ft. high.

300 Yards.

Price, 4-ft. high ⅝-in. diameter. Bars bundled and delivered f.o.b. London.

5/1 per yard. *Approximate weight, 6 tons, will pack into about 85 cubic feet.*

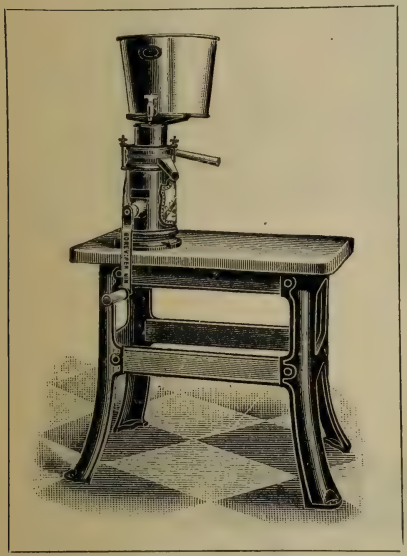
CAN BE FIXED CLOSE TO BOUNDARY.
Complete List Free.

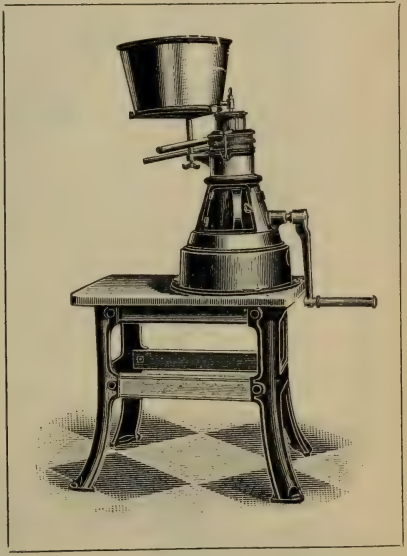
LISTER'S

Alexandra Cream Separators

Have beaten all Competitors.

The SIMPLEST. The STRONGEST. The BEST.





Sizes.	Capacity—Galls. per hour.	Suitable for from
No. 14 or "Daisy"	***8 to 10***	***1 to 3 Cows.***
No. 12 or "Little Turneesi"	***16***	***2 to 6 ,,***
No. 11½	***30***	***6 to 12 ,,***
No. 8	***30***	***6 to 14 ,,***
No. 7½	***40***	***10 to 16 ,,***
No. 7s	***55***	***16 to 30 ,,***

Price, case free, on application.

A recent Testimonial selected from Thousands.

GENTLEMEN,—You can inform enquirers that they can see my No. 8 here, which has been **at work daily since March, 1893,** and is now practically as good as new.

January 1st, 1903. C. MARTIN.

Agents for Western Province, } **R. M. ROSS & Co., CAPE TOWN.**

Agents for Orange River Colony, Transvaal & Natal, } **D. E. HOCKLY & Co., EAST LONDON.**

This Churn is extensively used in South Africa.

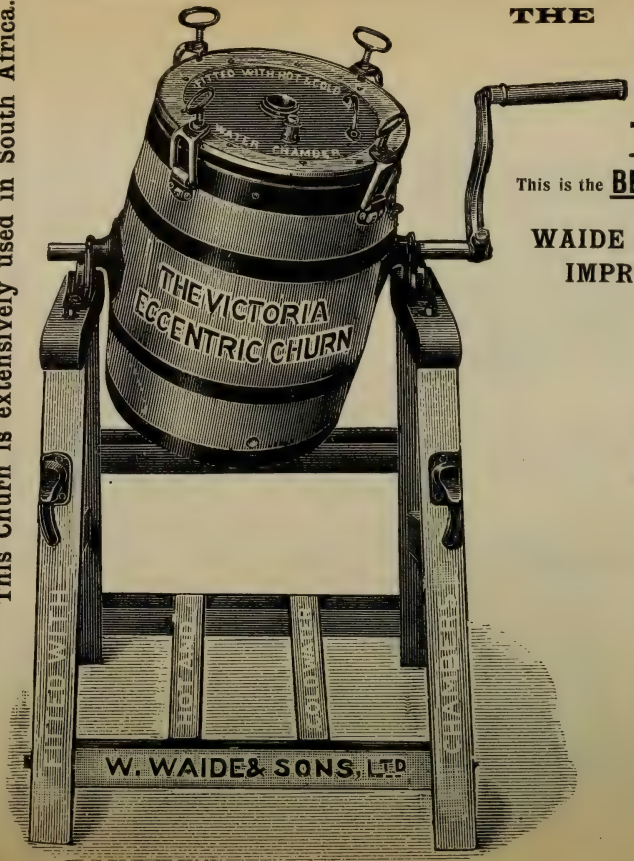
THE

VICTORIA ECCENTRIC CHURN.

This Churn has been awarded in Competition

THE LARGEST PRIZE Ever given to Churns in the United Kingdom.

This is the **BEST CHURN** for Shippers, Ironmongers, and Implement Agents to push.



WAIDE & SONS' IMPROVED

BUTTER WORKER AND DAIRY TABLE.

C SIZE £3 7s. 6D. | D SIZE £4 7s. 6D.

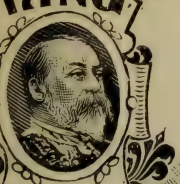
WRITE FOR PRICE LISTS, &C. TO **WAIDE AND SONS, Ltd., Churn Works, Leeds, England.**

The Victoria Eccentric Churn, fitted with hot and cold water chamber.

"MELOTTE"

50,000 IN DAILY USE.

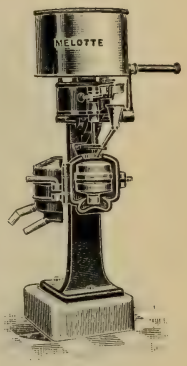
THE KING OF CREAM SEPARATORS



TURNS EASIEST.

SKIMS CLEANEST.

LASTS LONGEST.



The Lightest Running Machine in the World.

Has secured Premier Awards at the Leading Exhibitions, beating all competitors.

SOUTH AFRICAN AGENTS.

PHILIP BROS., Port Elizabeth.

JAMES ROBERTSON & CO., Cape Town.

S. BUTCHER & SONS, Durban.

Melotte Separator Sales Co., Ltd.,

BRISTOL, ENGLAND.

(*A.B.C. Code, 5th Edition.*)

A NOTABLE BRITISH SUCCESS:—

Two First Prizes awarded, Dairy Show, 1902 (18 Entries).

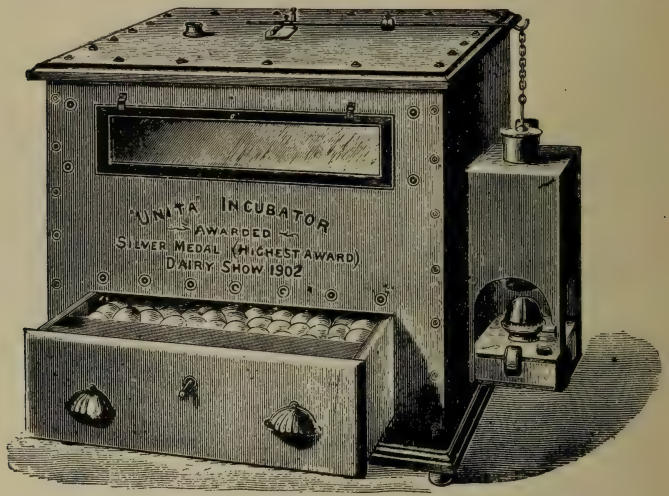
Highest Award (Silver Medal) Dairy Show, 1902, for best Incubator.

Highest Award (Silver Medal) Dairy Show, 1902, for best Poultry Appliance.

THE "UNITA" INCUBATORS (High Class),

Fostermothers, Cold Brooders, Fowl Houses,

And all Appliances used in the Artificial and Natural Incubation of Poultry, Game and Ostriches.



The "Unita" Incubator, awarded First Prize (Silver Medal) at Dairy Show, 1902.

THE LODGE, OAK LAWN, EDENBRIDGE, KENT, 20*th November*, 1902.

MR. TRIPE,

SIR,—I think you will be glad to know that the Silver Medal "Unita" Incubator purchased from you at the Dairy Show has given *great* satisfaction. The temperature has only varied half a degree *once*, and that on a very cold night when there were twelve degrees of frost.

I have been using *all sorts* of incubators for years and have never had one to keep so level a temperature. I am, Sir, yours faithfully, H. J. PHILLIPS.

THE "FRIARS" POULTRY FARM, GEORGE GREEN, BUCKS, 15*th September*, 1902.

DEAR SIR,—The "Unita" Incubator and Fostermother that you made for me have fully answered my expectations. They are both very reliable, and I look upon them as the very best machines obtainable.

Kindly make me eight more 100-Egg Incubators and eight Fostermothers in addition, fitted throughout as before.

I find that the Fostermother regulator answers well in every respect, having personally tested it. I am satisfied that it is a perfect Thermostat, and provides a long-felt want in the chicken-rearing industry. I shall have all my Fostermothers fitted with it. Yours faithfully, CECIL L. BYRNE.

Price 5 Guineas, complete (100-Egg capacity). 60-Egg capacity, **£4.**

For Ostrich Hatching, to hold 12 Eggs, **£8 8s.** To hold 30 Eggs, **£16 16s.**

Guaranteed Automatic. Of British Manufacture throughout. Sound Workmanship and all Brass Fittings. An exceptionally strong Copper tank a speciality.

Fully-illustrated Catalogue post free on application. Shipping Agents liberally treated.

ERNEST TRIPE,

Shipping Department, THE "UNITA" INCUBATOR WORKS,

. . SLOUGH, BUCKS, Eng.

Sole Agent for South Africa: THOMAS BLACK, Cape Town.

Makers to His Majesty *By Appointment the King.*

HEARSON'S PATENT

CHAMPION INCUBATORS.

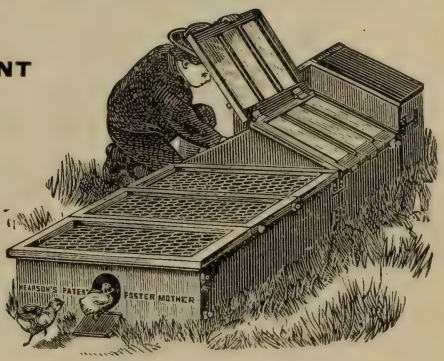
The **Champion Incubator** has now been before the world over **20 years,** and has achieved a reputation which eclipses all competitors. We supply the world with Incubators, and all who use our machines acknowledge them to be WITHOUT A RIVAL. Since their introduction no other Incubator maker in the world has been awarded a prize at any Show at which our apparatus have been entered for competition.

BEWARE OF WORTHLESS IMITATIONS.

HEARSON'S PATENT

Hydrothermic Foster Mother.

The best Outdoor Rearer for Chickens in the World.



HEARSON'S PATENT

Cramming Machine.

For the Forced Feeding of Fowls, Turkeys, &c.

Illustrated List Post Free.

CHAS. HEARSON & Co., Ltd.,

Cape Dept.,

235, Regent St., London, England.

C.C. C C

MELHUISH SONS & Co TOOLS,

Builders' Ironmongery & Farm Appliances.

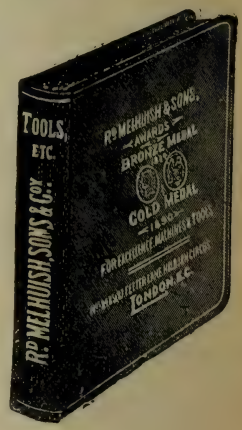
A NOTABLE CATALOGUE

WILL BE

GIVEN AWAY

On receipt of . . Stamps to cover postage. . . . .

Mention number of Catalogue section.



No. 15. **Woodworkers' and General Tools.** English post, 4*d*., Foreign, 9*d*.

No. 14. **Engineers' and Special Tools.** English post, 5*d*., Foreign, 9*d*.

No. 17. **Builders' and General Ironmongery.** English post, 5*d*., Foreign, 9*d*.

No. 16. **Farm and Estate Appliances.** English post, 5*d*., Foreign, 9*d*.

Established 1828

Rd Melhuish, Sons & Co.

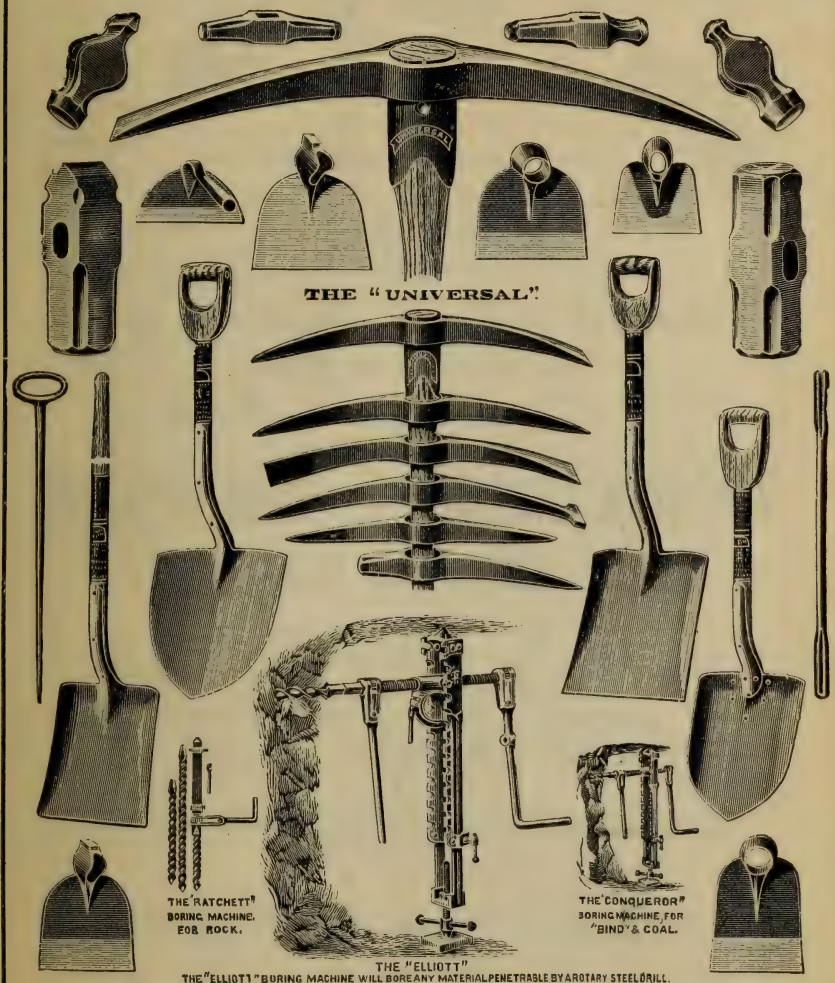
TOOLS.

84-87, FETTER LANE, HOLBORN CIRCUS, LONDON, ENG.

TELEGRAPHIC ADDRESS: "HARDYPICK," SHEFFIELD.

HIGH-CLASS TOOLS

For Miners and Contractors and Agriculturists.


THE "UNIVERSAL".
THE "RATCHETT" BORING MACHINE, FOR ROCK.
THE "CONQUEROR" BORING MACHINE, FOR "BIND" & COAL.
THE "ELLIOTT"
THE "ELLIOTT" BORING MACHINE WILL BORE ANY MATERIAL PENETRABLE BY A ROTARY STEEL DRILL.

SPECIAL TOUGH MINERS DRILL STEEL.

PICKS, SHOVELS, SPADES, FORKS, HOES, AXES, HAMMERS, WEDGES, CROWBARS, ETC.

HAND AND POWER BORING MACHINES FOR ROCK AND COAL.

Special Tough Drill Steel.

Ask your Ironmongers for our Tools, and see that you get them.

THE HARDY PATENT PICK CO., LTD.,

SHEFFIELD, ENGLAND.

JOSEPH & JOHN VICKERS & CO.

LIMITED.

BY APPOINTMENT

Distillers to H.M. the King, and H.R.H. the Prince of Wales.

Victoria Distillery, Lillie Bridge,

LONDON, Eng.

GIN, OLD TOM, BRANDY,
BRITISH BRANDY, RUM,
WHISKY, CORDIALS, & WINES.

Prices and Terms on application.

BONDED STOCKS—
LONDON, BRISTOL, SCOTLAND, and IRELAND.

Agencies in Africa, Australia, America, Canada, India, and for the Continent.

Telephone No. 410, KENSINGTON. Telegraphic Address: "SPIRITUOUS, LONDON."

SOUTH AFRICA.

CARTER, PAGE & CO.'s Vegetable and Flower Seeds.

John White's **VICTORIA** Hams, Bacon, Cheese, and Lard. **TAVISTOCK** Jam Co. Taylor Bros.' **CHICORY,** Cocoas, Mustard. **GRIMBLE'S** Vinegar. **GILLARD'S PICKLES** & Sauce. **FECULINA.** C. Bartley's **SADDLERY,** Harness, &c. J. A. Carpenter's Tongues, Potted Meats and Camp Rations. Thomas' **SOAP.** Clover Leaf Margarine. Shark Brand Razors. **ARCHER'S** Brushware. Bruce **OATMEAL** and **PEARL BARLEY.** **EDME MALT EXTRACT.** **BUTTER,** Australian, in Boxes of 56 lbs., also Danish Tinned. R. Hayward & Son's **CANVAS, WAGON COVERS, &c.** **MACARONI and VERMICELLI.** B. & E. Perrier's **CHAMPAGNE.** Guiness' **STOUT,** and Bass' **ALE,** "Butterfly Brand." J. Heilbronner & Co.'s Hocks and Moselles. British Cider Growers' Association Devonshire Cider. **P. MACKENZIE & Co., Ld.,** Scotch Whisky. Wilson's **OLD CHUM** Scotch Whisky. Sound **INVALID PORT,** "Yellow Seal." Bewlay's **INDIAN CIGARS, FLOR DE DINDIGUL,** and **SOLITARE Brand CIGARETTES.**

English Telegraph Address: "LARYMNA, LONDON."

Cables per Eastern Telegraph: "CELEBRANT, LONDON."

A.B.C. and A 1 Codes used.

Clarke and Creswell,

2, GRESHAM BUILDINGS, GUILDHALL, LONDON, ENG.

Agents for—

N.B.—Orders can be given through any Coast House, Cape Town, Port Elizabeth, East London or Durban to transmit to their London Agents.

National Waifs' Association

(DR. BARNARDO'S HOMES).

(1) Has to-day **6,284 Boys and Girls** under its care.

(2) **Never declines** a Destitute Child, even if Sick, Afflicted, Incurable, or a Helpless Infant.

(3) **Is freely admitting** Sixty new cases every week from all over the Kingdom.

(4) **Searches for and Seeks** out Necessitous Children in the Slums of all our Great Towns.

(5) **No Election ; No Waiting List ;** No Money Promise ; No Barriers on account of age, sex, creed, nationality, or physical health. Destitution the only and essential qualification.

(6) **At least £200 per day** required for food alone.

Will not kind hearts everywhere pity and help Little Children who are in dire need from hunger and cold and destitution ?

BRASSEY, President.
WILLIAM FOWLER, Treasurer.
HOWARD WILLIAMS, Chairman of Council.
THOS. J. BARNARDO, Founder and Director.
GEORGE CODE, Hon. Secretary.

Bankers: **London and South-Western Bank** and **Prescott, Dimsdale and Co.**

Head Offices: **18 to 26, Stepney Causeway, London, Eng.**

THE LARGEST CIRCULATION OF ANY SOUTH AFRICAN NEWSPAPER.

A WEEKLY JOURNAL FOR ALL INTERESTED IN SOUTH AFRICAN AFFAIRS.

SOUTH AFRICA, which was founded in 1889, is published every Saturday, price 6d., and may be obtained at all Bookstalls and all Newsagents throughout Great Britain and South Africa, or direct from the Offices, Post Free, as follows:—United Kingdom, **29s.** per annum; Abroad, **39s.** per annum.

SOUTH AFRICA is conducted by Edward P. Mathers, F.G.S., F.R.G.S., Author of the very successful works: "Golden South Africa," "Zambesia: England's El Dorado in Africa," &c.

SOUTH AFRICA issues important Maps and contains South African Pictures which give it a unique place in English illustrated journalism.

SOUTH AFRICA is the South African's Vade Mecum everywhere.

SOUTH AFRICA is the only recognised European organ of the South African Goldfields.

SOUTH AFRICA, as an Advertising Medium, offers quite exceptional advantages to Manufacturers desirous of extending trade in South Africa.

The Head Offices of "SOUTH AFRICA" are at

39, Old Broad Street, LONDON, ENG.

☞ **Send a Postcard for a Specimen Copy of the Paper and Lists of Gratuitous Supplements and useful Sixpenny South African Handbooks.**

THE BEST GUINEA ATLAS.

The Victoria Regina Atlas.

SECOND EDITION.

Royal 4to, 12½ by 10 inches. Containing 200 Plates, Political, Physical, and Astronomical. Frontispieces illustrating the Time of all Nations, Arms of Great Britain and her Colonies, National Arms, the Flags of all Nations, and complete Index to 100,500 places named. Prices, half-bound Persian morocco, gilt top, **£1 1s.**; full-bound French morocco, gilt edges, **£1 8s.**; full-bound morocco, extra gilt, gilt edges, **£2 5s.**

FIFTH EDITION.

The World-Wide Atlas.

A wonderful production. Known everywhere for its excellence. Containing Two Frontispieces, Introduction, 128 Coloured Maps, and Index to 63,000 places. Royal 4to, handsomely bound in cloth, price, **7s. 6d.**; half-bound morocco, **12s. 6d.**

NOW READY.

Imperial 8vo, with 22 Double Page Plates in Colours, and 44 Illustrations in the Text. Full-bound cloth, price, **7s. 6d.**

THE

Twentieth Century Atlas of Popular Astronomy.

By THOMAS HEATH, B.A.,

First Assistant Astronomer, Royal Observatory, Edinburgh.

The Publishers are pleased to announce the completion of this important Work. The letterpress is written in a popular way, so that those who take up the subject for the first time will have no difficulty in understanding it. Both the Author and the Publishers trust that their efforts in producing an interesting work on a science which all should know something of will be appreciated.

Africa.

Entirely New Map just published. The Investors' and Newspaper Readers' Map. Size, 38 by 30 inches. Scale, 186 miles to an inch. The Possessions of the European Powers are shown in different colours, and there is a Table showing how each territory has been acquired, with interesting statistics. Price, folded, **1s.**; on cloth, folded in cloth case, **2s. 6d.**; on cloth, rollers, and varnished, **3s. 6d.**

South Africa.

To illustrate the Military Operations. With Insets of Africa, Northern Natal, the Cape, and Durban. A Table of Distances is given, and all places mentioned in connection with the War are underlined in red. Size 35 by 28½ inches. Price, coloured, **1s.**; on cloth, folded in cloth case, **2s.**

The above Maps and Atlases are sent Carriage Paid to any address in United Kingdom on receipt of the Published Price.

W. & A. K. JOHNSTON, LTD.

(ESTABLISHED 1825),

Geographical, Educational, and General Publishers,

Edina Works, Easter Road, and 20, South Saint Andrew Street, Edinburgh; 7, Paternoster Square, London, E.C.

The London
"PUNCH"

PUBLISHED WEEKLY.

TO BE OBTAINED OF

GORDON & GOTCH,

CAPE TOWN and DURBAN.

PROPRIETORS:

BRADBURY, AGNEW, & CO. LD.,

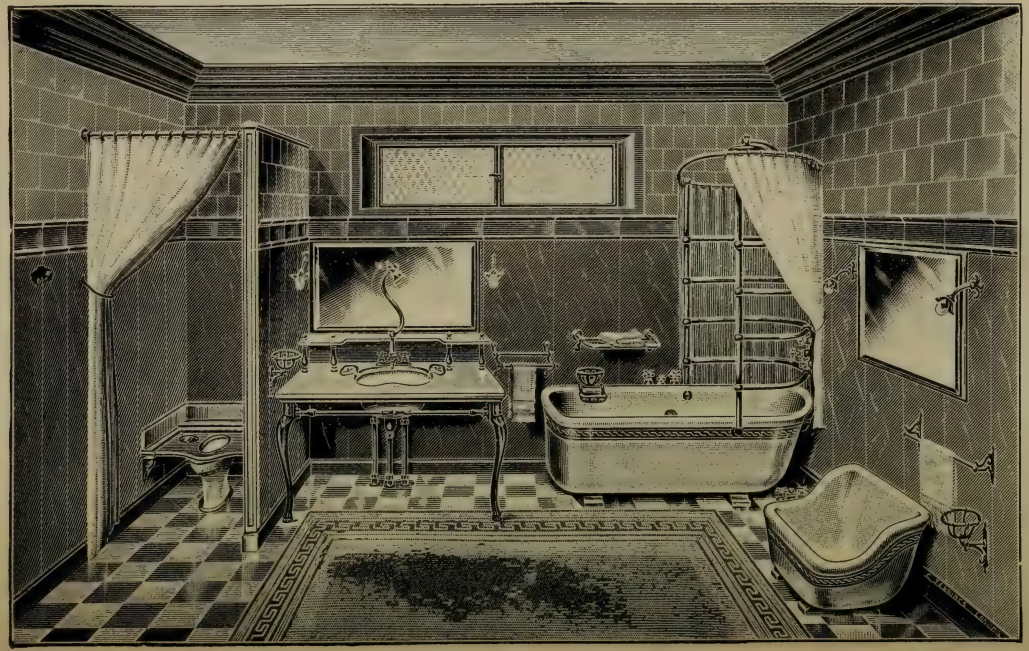
Law, Fine Art, and General Printers,

10, BOUVERIE STREET, LONDON, and

TONBRIDGE, KENT, ENGLAND.

Printers of "The Studio," "Feilden's Magazine," "Engineering Times," etc., etc.

GEORGE JENNINGS, LTD.



JENNINGS' PATENT "REVERSIBLE" (COMMODE & BIDET OR LAVATORY).

BY ROYAL APPOINTMENT

Sanitary . .

. . Engineers

TO

H.M. THE KING.

Works, Showrooms and Offices:

Lambeth Palace Rd.,

(Opposite

St. Thomas's Hospital),

LONDON, Eng.

Agents in Natal:

BULKLEY & BOWDEN,

DURBAN.

ILLUSTRATED CATALOGUES

. . ON APPLICATION.

Telegrams:

"JENNINGS, LONDON."

RUBEROID ROOFING.

STORE COVERED WITH RUBEROID.

CHEAPER AND COOLER THAN GALVANIZED IRON.

RUBEROID is the most reliable Roofing for use on all kinds of Farm and other Buildings. Contains no Tar, Paper, or Pitch, will not melt, run, crack, tear, or blister, light, easily laid. : : :

RUBEROID GIVES MAXIMUM DURABILITY FOR MINIMUM COST.

Send for samples and full particulars.

ROBERT W. BLACKWELL & Co., Ld.,
59, City Road, London, E.C.

VAN OPPEN & CO., LIMITED.

ESTABLISHED 1879.

Colonial Shipping & Forwarding Agents,

Insurance Agents & Commission Merchants.

HEAD OFFICE:

90 & 91, BARTHOLOMEW CLOSE, LONDON, ENG.

BRANCHES AND AGENCIES AT

Liverpool, Manchester, Rotterdam, Cologne, Cleve, Paris, Brussels, Berlin, Vienna, Etc.

Correspondents in all Principal Towns of the World.

Through Inclusive Rates of Freight quoted to or from any Part of the World.

Through Bills of Lading (for Banking and other purposes) issued.

VAN OPPEN & CO., LIMITED, are Traffic Agents for

The GREAT NORTHERN RAILWAY CO. of ENGLAND.
,, GREAT WESTERN ,, ,, ,,
,, GREAT EASTERN ,, ,, ,,
,, "VELOCITA," INTERNATIONAL SOCIETY FOR FORWARDING BAGGAGE.
,, RUSSIAN TRANSPORT CO., with over 400 Branches in European and Asiatic Russia.

Household Effects, Furniture, Merchandise, &c., Warehoused, Packed and Shipped for Export.

VAN OPPEN & Co., LIMITED, have reliable Agents at all South African Ports and Chief Cities.

Cables: **"Vanoppen, London."** ***Codes:*** **Liebers and A.B.C.**

COOK'S TOURS.

Thos. Cook & Son

Beg to call attention to the special facilities offered by them to Travellers, Army and Navy Officers, and others journeying to, through, or from all parts of **South Africa.**

Passages secured by **"Union-Castle"** and all other Steamship Lines.

As the appointed Agents for the Cape and Natal Governments' Railways, THOS. COOK & SON issue Single and Return Tickets to all Up Country . . Stations. . .

BANKING DEPARTMENT.

Current Accounts kept. Drafts, Letters of Credit, and Circular Notes issued. Foreign Monies exchanged. Agency Transactions for Officers and others undertaken.

FORWARDING DEPARTMENT.

Packages stored, and Baggage, Goods and Live Animals forwarded to any part of the World at lowest rates. Cargo collected and shipped. . .

THOS. COOK & SON,

CHIEF OFFICE: **Ludgate Circus, London, Eng.**

Telegraphic Address: "COUPON, LONDON."

Cape Town Office:
"Cape Times" Buildings,
52, St. George's Street.

Durban Office:
Smith Street.

LUND'S BLUE ANCHOR LINE

REGULAR SERVICE OF FAST STEAMERS

between **ENGLAND** and

AUSTRALIA *VIA* SOUTH AFRICA,

Carrying H.M. MAILS between SOUTH AFRICA and AUSTRALIA.

FLEET.

	TONS.		TONS.
COMMONWEALTH (TWIN SCREW) ...	6611	NARRUNG	5078
WILCANNIA	5000	WARRIGAL	4387
WAKOOL	5013	NEW STEAMER (TWIN SCREW) ...	7000
YARRAWONGA	4011	NEW STEAMER (TWIN SCREW) ...	7000

All the Steamers added to the Line since 1896 have been fitted with Bilge Keels, which make them exceptionally steady at sea; and they are also lighted throughout by electricity, and have special refrigerated chambers for the carriage of all kinds of fresh provisions, Fish, Game, etc.; Ice is also supplied during the voyage when required.

FARES: FIRST CLASS, in large 2 and 3 Berth State Rooms, on Main Deck or Bridge Deck amidships, between England and South Africa, from **£25** to **£30.**

FARES: THIRD CLASS, in 2-Berth, 4-Berth, 6-Berth, 8-Berth, or Open Berth Cabins, between England and South Africa, from **9** to **13** guineas.

For Time Tables, and all Information, apply to

W. LUND, 3, East India Avenue, E.C., LONDON.
Wm. ANDERSON & CO., CAPE TOWN, SOUTH AFRICA.
J. T. RENNIE & SON, DURBAN, NATAL.

HOUSTON LINE.

United Kingdom to all Ports in South Africa.

REGULAR SAILINGS FROM LIVERPOOL, LONDON, GLASGOW and BRISTOL.

SPECIAL LOW RATES of FREIGHT for CARGO.

FOR FURTHER INFORMATION APPLY TO

R. P. HOUSTON & CO.,

10, Dale Street, Liverpool.

R. P. HOUSTON & CO.,

1, Finsbury House, Blomfield St., London, E.C.

SOUTH AFRICAN AGENTS:

Cape Town	Mitchell, Cotts & Co.
Port Elizabeth	Mitchell, Cotts & Co.
East London	Mitchell, Cotts & Co.
Durban	Wm. Cotts & Co.
Delagoa Bay	Cotts, Cotts & Co.

HOULDER BROTHERS and Co., Limited.

STEAM SERVICES BETWEEN

England, Australasian, South & East AND Africa, South American Ports.

Australasian, River Plate, AND African Ports.

Passages booked by all Lines to all parts of the World.
Freight Contracts made and Insurances effected. . . .

HOULDER LINE OF STEAMERS.

	Tons.		Tons
HORNBY GRANGE	3,750	BEACON GRANGE	6,400
OVINGDEAN GRANGE	3,500	RIPPINGHAM GRANGE ...	9,200
URMSTON GRANGE	5,400	OSWESTRY GRANGE*	10,000
LANGTON GRANGE	9,200	THORPE GRANGE	6,350
DRAYTON GRANGE*	10,000	HAVERSHAM GRANGE ...	11,200
ELSTREE GRANGE	6,000	EVERTON GRANGE*	11,000
ROYSTON GRANGE	6,400	SOUTHERN CROSS	7,300

* Twin-screw.

These Splendid Full-powered Steam Ships, employed in the above trades have excellent accommodation for Passengers, fitted with the latest improvements. Dining Saloons and State Rooms amidships, Smoking Room, Baths (h. & c.), Piano, Refrigerated Provision Chambers, Electric Light, etc. Stewardess carried.

Apply to :—

HOULDER BROTHERS and Co., Limited,

146, Leadenhall Street, London, E.C.

BRANCHES

London - -	12, Pall Mall, S.W.
Liverpool - -	14, Water Street.
Glasgow - -	30, Gordon Street.
Sydney, N.S.W.	63, Pitt Street.
Buenos Aires -	337, Calle Cayo.
Rosario - -	446, Calle San Martin.
La Plata - -	Gran Dock, Ensenada.

AND

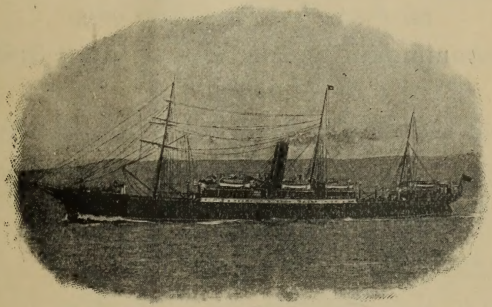
28, Atkinsons Chambers, Cape Town.

Telegraphic and Cable Address: "Houlders."

THE ABERDEEN LINE.

London, South Africa and Australia.

The Steamers of this Line leave London every three weeks calling outwards at PLYMOUTH, TENERIFE, CAPETOWN, MELBOURNE, SYDNEY, and homeward at SYDNEY, MELBOURNE, ALBANY, NATAL, CAPETOWN, TENERIFE, PLYMOUTH. . . .



They contain very superior Accommodation for Passengers (1st and 3rd class only), and provide an excellent Cuisine. Each of the Steamers carries a Doctor and Stewardess. The 1st Class State Rooms are nearly all for two Passengers only, and are EXCEPTIONALLY LARGE AND AIRY.

The 3rd Class Cabins are 2-Berth, 4-Berth, and Open Berth.

SALOON FARES.

	£	s.	d.
London to and from Capetown	30	0	0
Capetown and Natal to and from Australia ... from	31	10	0

THIRD CLASS FARES.

	£	s.	d.
Capetown to London	10	10	0
Capetown and Natal to Australia ... ... from	13	13	0
London to Capetown ... ... ,,	9	9	0
Australia to Natal and Capetown ... ... ,,	13	13	0

NAMES OF STEAMERS.

	TONS.		TONS.
ABERDEEN	3,684	SALAMIS	4,508
AUSTRALASIAN	3,661	SOPHOCLES	4,673
DAMASCUS	3,726	*MILTIADES (T.S)	6,700
MORAVIAN	4,573	*NEW STEAMER (T.S.) ...	6,700
NINEVEH	3,808		

* Building.

These Steamers carry H.M. Mails between South Africa and Australia.

FOR FULL PARTICULARS OF PASSAGE RATES, ETC., APPLY TO

Wm. Anderson & Co., Capetown; J. T. Rennie & Sons, Natal; Dalgety & Co., Ltd., Australian Ports; or the Managing Owners, **Geo. Thompson & Co., 7, Billiter Square, London, E.C., and 60, Marischal Street, Aberdeen.**

BUCKNALL STEAMSHIP LINES

(BRITISH AND COLONIAL LINE).

LONDON TO SOUTH AFRICA.

PASSENGER SERVICE

TO

CAPE TOWN, ALGOA BAY, EAST LONDON & NATAL.

The Steamers of this Line have Magnificent Accommodation for First-class Passengers only.

Entire Accommodation on Upper and Bridge Deck Amidships.

Electric Lighting and all Latest Improvements.

Experienced Surgeon and Stewardess accompany each Steamer.

High-Class Cuisine.

First-class Passengers only at Specially Low Rates.

FARES.

To Cape Town - -	*£28*	*To East London* - -	*£32*
,, Algoa Bay - -	*£30*	*,, Natal* - - - -	*£32*

FREIGHT SERVICE.

THE BUCKNALL STEAMSHIP LINES, LIMITED, will despatch from London about every ten days for CAPE TOWN, ALGOA BAY, EAST LONDON, NATAL, DELAGOA BAY and BEIRA, their magnificent full-powered Steamers (100 A1), built expressly for the Service. These Steamers are all of light draft, and specially designed to cross the Bar at East London and Natal.

For all particulars apply to the Managers—

BUCKNALL BROTHERS,

East India Chambers, 23, Leadenhall Street, LONDON, E.C.

SOUTH AFRICAN ROYAL MAIL SERVICE.

The

Union-Castle Line.

LIST OF FLEET.

TONS

NEW MAIL STE
NEW MAIL ST
WALMER CAST
SAXON ...
BRITON ...
KILDONAN CA
KINFAUNS CA
SCOT ...
CARISBROOK
NORMAN
GALEKA...
GERMAN
GALICIAN
GASCON ...
GAIKA ...
GOORKHA
BRAEMAR C
NEWARK CA
DUNVEGAN
DUNOTTAR
AVONDALE
TINTAGEL C

Lo

MADE

CAPE

Union-C

Ret urn
Accon mo

D

3 &

CANUTE
34, CAST

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

DT
822
B77

Burton, Alfred Richard Edward
Cape Colony for the settler

UTL AT DOWNSVIEW
D RANGE BAY SHLF POS ITEM C
39 08 13 13 02 011 2